

THE NOR-WEST FARMER.

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in advance.



THE HORSE.

Hygiene in the Stable.

4. Water.

As hygiene includes everything that concerns the health we must not conclude the subject without a short examination of the water supply of the stable. In the first place we may lay down the axiom that water is not good enough for horses that is not good enough for man. Although few may be prepared to assert the contrary, yet the practice of many horse owners is to give their horses any kind of water they will drink. Probably, if they realized some of the evil results of drinking impure water they would be more careful in this respect, and therefore a brief glance at the impurities of water and the effects they produce on animals drinking them will be in order.

Impurities in water may be divided into two classes: 1. The Organic, which are derived from a living source, and may consist of living organisms of either animal or vegetable nature, such as bacteria, monads and infusoria, or else of the products of decay of animal and vegetable substances. 2. The Inorganic, consisting of mineral substances dissolved out of the soil by the water in its passage from its source to the well, such as salts of lime, magnesia, iron, etc.

infected water. The water containing these organisms may be quite clear to the eye, bright and sparkling, and even be palatable to the taste, but generally has a peculiar odor which develops strongly when the water has been standing for some time in a closed vessel in a warm place. Suspected water may be tested by filling a clean bottle, corking and keeping warm for several hours, when it will be free from odor if pure. This is only a

are of a kind injurious to the animal system, or of too large a quantity of salts which would be harmless in proper amount. The well-known alkali waters frequently found in various parts of the province are examples of inorganic impurities. Alkali water is less injurious than many forms of impure water, and when horses and cattle have become accustomed to its use, they seem able to tolerate water which would be decidedly in-



Barn on the Farm of John Fleming, jr., Arrow River, Man., costing \$2000

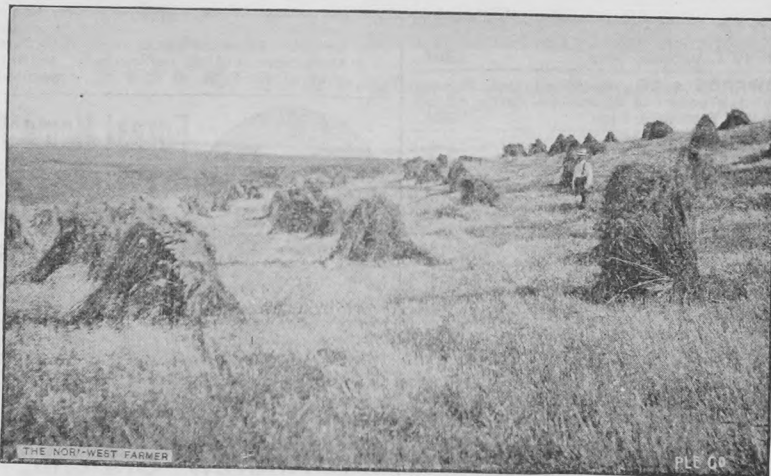
rough and ready test, and it requires a chemical analysis in some cases to determine the drinking qualities of waters which are on the verge of one class or the other—the pure or the impure. For it must be understood that no ordinary drinking water is absolutely pure. In fact chemically pure water is not good drink-

injurious to a human being. In a horse not habituated to its use, such water will frequently cause a sharp attack of colic and diarrhoea, and when no other water is available, it should only be given in small quantities until the system becomes used to it.

Impurities in water might also be classified into preventable and unavoidable. Water, as it descends in rain from the clouds, is pure, but as soon as it encounters the earth and begins to make its way towards the ocean it meets with all sorts of materials ready to contaminate it. The various salts and minerals which water dissolves in its passage through the soil we cannot prevent, but we can prevent the contamination of wells and streams by sewage, decaying organic matter, drainage of stables, etc., and these are the really dangerous impurities. In spite of this, the well is often found in the stable itself, and no care is taken to prevent the drainage of the stable from leaking into it. As long as the horses will drink the water the owner is satisfied, and of course if he is satisfied, whose business is it to interfere? But, lest he err through ignorance, our duty is done in pointing out the error of his ways, in hope that the scales may fall from his eyes and he may see clearly his duty towards his dumb friends.

A Remarkable Drive.

A young man and his mother drove from Ottawa, Ill., to Boston, Mass., last summer, a distance of 1,400 miles. The trip occupied about nine weeks, and the horse, by careful handling, was fat and in splendid shape when she arrived in Boston. Such a trip affords a few lessons as to what a horse can do daily drawing a low phaeton with two people in it and about 100 lbs. of baggage. People who



Bromus inermis in Stook on the Farm of F. W. Godsall, Pincher Creek, Alta.

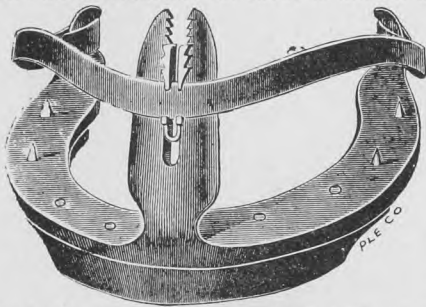
Of these two classes of impurities the former is the most important from a hygienic standpoint. Organic impurities in the water may be the germs of disease, the ova (eggs) of parasites, and furnish the starting point of such conditions as pernicious anaemia, malarial or "swamp" fever, and infection with intestinal worms. "Swamp" fever may generally be traced to infection through the polluted water of sloughs and streams flowing from them, and intestinal worms are largely spread by

ing water. Many of the salts contained in ordinary water, the salts of lime, for instance, are absolutely essential to the growth of animals, and they must obtain these materials either in the food or in the water. This is one reason why a limestone country, such as Kentucky, is so well adapted to raising a superior class of horses, the water contains the lime salts required to build up a perfect bony framework. Mineral salts in water, then, cannot be classed as impurities unless they

think that such a trip can be made at the rate of 40 miles a day are much mistaken. Beginning with a soft horse, it was found that 10 or 12 miles a day were sufficient, especially as the trip began in July when the thermometer was over 90°. After the horse became accustomed to the work, it was found that she could stand an average of about 24 miles a day. Special attention had to be paid to both water and feed and to the hostlers to see that the grain allowed was not removed after being fed. The horse made the trip on three quarts of oats at a feed. It was found very necessary to watch carefully against harness galls and sore feet. During hot weather the horse's chest, back and head were washed every night with salt and water to keep the harness from galling and to cure fly bites.

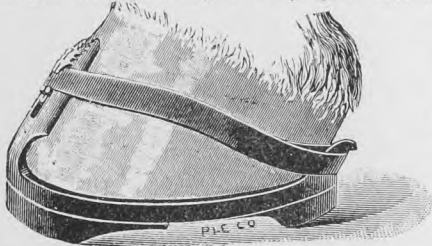
A Nailless Horseshoe.

There have been many attempts to make shoes which can be attached to a horse's feet and removed without injury, but until now none have been invented which have stood the test of thorough work, and obtained the approval of large horse owners. The latest candidate for favor is known as



Wakfer's Patent Nailless Horse Shoe, of which we give illustrations. It will be seen that this horse shoe, which is nailless, consists of four parts:—First, the permanent upper frame; second, the renewable under-wearing parts; third, the flexible metal band; and fourth, the spring holding the band, and working inside the ratchet in front lug.

It has been tested for eight months on horses doing heavy work on a tramway, and it has given every satisfaction. With this shoe it is claimed that there is very little fitting needed, no breaking of the hoof, and a much sounder, stronger hoof is grown. Horses doing heavy work on city streets will maintain their usefulness longer because they usually give out in



their feet first, largely owing to frequent shoeing. The shoe is easily removed and all dirt can be quickly cleaned out. On account of no nails being needed to fasten it, there is no danger from nail pricks, and it furnishes the best possible opportunity for keeping the hoof in a natural condition free of nail holes. The head office of the makers is at 54 Billiter Buildings, Billiter street, E. C., London Eng.

A great many farmers are very fond of telling how very easily some of their favorite animals are kept. The other day a man, in showing us a strong, well-conditioned horse, remarked: "Why, sir, he only gets straw,—and sometimes hardly that." His diet "sometimes" must be a pretty lean one.

BREEDERS' DIRECTORY

CARDS under this head inserted at the rate of \$1.50 per line per year. No card accepted under two lines, nor for less than six months.

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W. C. EDWARDS & CO., North Nation Mills, P.Q. Importers and Breeders of Ayrshire Cattle Shropshire Sheep and Berkshire Pigs. 1642f

JOHN TURNER, "Bonny Brae Farm," breeder of Polled Angus Cattle. Young stock of both sexes for sale. Address, John Turner, Carroll, Man.

W. F. PIEPER, Morden, Man. Pedigrees, Calling and Show Cards in pen work. Everything in the line of engraving. Send stamp for samples.

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T. JASPER, Bradwardine. Shorthorn Bulls, Berkshires and Oxford Downs for sale.

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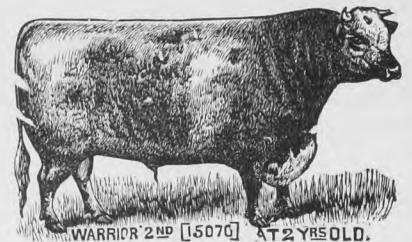
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RESTRONGUET STOCK FARM



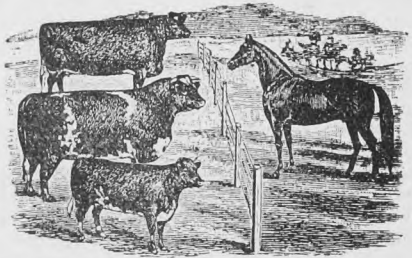
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CATTLE.

Wintering at a Straw Stack.

(Continued.)

In our last paper on this subject attention was drawn to the conditions under which wintering on straw could be done with success and profit. The best evidence of the correctness of that opinion is the success of the men, who, by the light of observation and experience, have wintered thousands of good cattle in that way. They not only know but were prepared to act at all times up to their knowledge, provide water regularly, and a fair chance of shelter if those cattle were to lie out all winter, as plenty of them did. With decent housing the job is an easier one, but any sane beast would prefer to lie out altogether, with a chance to find for itself such shelter as the place affords, rather than be tied by the neck in a seamy old shed that every wind of heaven blows through. Dehorning, let us say in passing, would add much to the comfort and safety of all cattle not tied up.

Experience shows that though the feed found at an average straw stack is amply sufficient to sustain a healthy animal, al-

we are richer intellectually, and may, if we take the proper pains, be made richer in purse as well.

The difference in the quality of the produce of different soils is more easily noted by an observant feeder than explained by the scientist, and it is not necessary for our present purpose to do more than point out that such differences do exist and should be looked for. The difference in feeding value of different varieties of plants and in the same plant at different stages of its growth is what we are more directly concerned with. The nutritive value of the products of our soils lies nearer the heart of the feeding question. In the growing stages of grain and grass there is only from 10 to 30 per cent. of solid matter. The nearer we get to maturity there is less water and more solid in the make-up of the plant. All such foods are very bulky in proportion to their nutritive values, but they suit cattle whose digestive organs are specially fitted for bulky foods. As such plants go on to maturity it is found in practice that, say timothy or oats cut at or shortly after the blooming stage, are at once most palatable and most digestible. Every day it lives beyond that stage a seed-bearing plant, is doing its best to store up in that seed for purposes of reproduction its vital

for the finest and least ripe portions. Their instinct teaches them to reject, as far as possible, the over-ripe, indigestible and unprofitable parts of the pile and use the rest. The chemist, if asked, explains why. He tells us, for one thing, that in average wheat straw there is only 3 per cent. of nitrogenous or flesh-forming matter, and of that only 25 to 30 per cent. is digestible. But in the chaff of that straw there is 94 per cent. of flesh-forming matter and 82 per cent. of that is digestible. This makes an immense difference in the relative flesh-forming matter found in straw and chaff. If the grain and foul seeds found in the bottom of that pile among the chaff could be digested, a healthy beast working there all day could make a good thing of it. But, as a fact, we know many of those seeds are not digested, and therefore, even when eaten, they contribute little to the support of the beast. It is mainly on the greener part of the straw and the chaff that our cattle depend. On the economy of digestion we learn further from the chemist that while in ordinary wheat straw there is only about 3 per cent. of flesh-formers, of which 25 to 30 per cent. are digestible, there is 1.2 per cent. of fat, 2.7 per cent. of it digestible; it contains 374 per cent. of carbohydrates or heat-forming matter, of which 40 per cent is digest-



Farm Buildings of George Bradshaw, near Morden, Man.

lowance must also be made for the enormous waste of heat when an animal lies out in a very low temperature. The men who have had most success in wintering on straw are always careful to provide housing sufficient to keep the temperature in which their stock is fed not lower than the freezing point. Very robust animals can stand a much lower temperature, but a good close shed, with a door space opening to the least exposed direction, would pay for itself every time, and if the door is kept shut all night, so much the better.

All we have already said is quite familiar to the man who, out of his own ripe experience has already learned how to winter dry stock cheaply, yet profitably, for cheapness does not always mean profit. But such a man, with all his stock of sound practical knowledge, might with much profit add to the "know how" some acquaintance with the why and wherefore of the facts he knows. This "know why" the scientific teaching of the present day provides for us. We find here and there really capable feeders who sneer at scientific teachers as "mere theorists," but this is a mistake. Correct science and sound practical work are always found in perfect harmony, and by going beneath the surface of things with science as our guide,

constituents. When quite ripe, the stalks on which those seeds grow are mostly woody fibre and have comparatively little food value. If we cut wheat a week before it has reached this mature stage, part of the nutritive value on its way to the perfecting of the seed is arrested in the straw, and that straw is therefore more palatable and nutritious than if it had been left to ripen. This explains why oats cut green are so valuable for milch cows and so greedily eaten by all stock. The nutrients travelling up through the stalks are held there and eaten by the beasts. We also note that the bottom straw of a sheaf is seldom eaten, both because it is less digestible than the upper part and because there is much less food in it. In the straw itself, therefore, besides the difference due to the quality of the soil it grew on there will be found in practice a considerable difference in feed value due to the stage of maturity at which it was cut, the root ends always being left uneaten.

Let us now follow a herd of cattle to the sunny side of a straw stack and make our observations. They tramp over a lot of hard shanks, which, if lying out all the time, they only use as bedding. They dig in the bottom of the heap for chaff, foul seeds, and grain, and pick over the straw

ible. Most readers have come across the phrase "balanced ration." By both chemical and practical tests we find that one pound of nitrogenous matter, or protein, as it is sometimes called, is wanted in the food to balance from 5 to 8 of carbohydrates, out of which the working stock of heat and nerve force is produced. But that straw, by chemical analysis, shows only 1 part of nitrogenous to 18 or 20 of carbohydrate, and therefore a beast fed on straw alone would be very imperfectly nourished. And if we haul the straw in from a distant stack, but are careless about gathering up the chaff along with it, our cattle are bound to run down very fast if they can get nothing else to compensate for the loss of the chaff. Left to themselves cattle would make the most of that stack by selecting the most nutritious parts of it and reject the rest. By the method of handling that some men follow their beasts are gradually starved. Is there anything within the range of your own observation to which this explanation will apply. If the scientist and his analysis are to be depended on, a beast lying round a stack all winter in decent shelter will do better than one well-housed but deprived, through ignorance, of the chaff, the most valuable part of the stack.

Sunday and the Industrial.

One of the live stock exhibitors complains that a great deal of Sabbath labor is necessitated under the existing plan of having the Winnipeg fair commence on a Monday and end on a Saturday. By way of illustration, he says that "last July I shipped stock to the fair and they arrived in the city on Sunday morning. This meant, in the first place, that a great deal of that day had to be taken up in handling the animals, in getting feed for them, and in the many and various cares which fall upon the exhibitor upon arriving in the city with stock. This simply transformed the Sunday preceding the fair into a working and business day. Then, again, the following Sunday was occupied in taking stock away, in waiting about the railway yards, and in loading. This entails another day's work. Animals and articles have to be watched, particularly in breaking up, for although the exhibitors are generally an honest class, still there are always a few persons loafing about whose ideas of 'meum and teum' are a trifle lax, and these individuals are always apt the last day to try to 'rustle' small sundries which are left unguarded. Thus another Sabbath was broken into.

"I think (and many others of the stock exhibitors feel the same way) that it would be better to have the fair commence in the middle of one week and end in the middle of the next. This would, of course, make a very material change in the whole layout of the fair. It would mean that very many visitors would spend Sunday in the city. While a few who attend might not care for this arrangement, still there might be quite a number, including the exhibitors, who would not be at all averse to a quiet day's rest in the middle of their sight-seeing and work, and a chance to attend some of the city churches. On the other hand, most of those whose time was limited could come in, see the fair and return either before or after the Sunday.

"Most of the live stock exhibitors are men of fixed habits, men used to placing a due respect upon the Sabbath, and this bustle and work which entirely breaks in upon and destroys the sanctity of the day is perhaps more distasteful than any of us care to say. At any rate, this is my view of the case, and might it not be well to feel the pulse of the exhibitors in regard to the matter before arrangements are made for another fair?"

Note.—The Farmer will be pleased to have an expression of opinion from the breeders upon this subject. As the C.P.R. have been carrying stock to and from the exhibition free, the exhibitors can hardly complain if the railway authorities wish to move the stock when there is the least traffic on the line. Even if the breeders have to pay some transportation charges another year, it will have to be at reduced rates, and again the breeders will have to accept conditions that will best suit the work of handling the stock by the railway people. Then the breeders must not forget that a Sunday in the middle of the fair week would not be to the best interest of the exhibition, nor to its numerous visitors. The principle upon which we must proceed is the greatest good to the greatest number.

Prof. Wallace, the well-known Edinburgh enthusiast, says regarding the use of linseed oil for keeping horses in fine condition that "a horse doing very hard work, and receiving a full daily allowance of oats, is much better for about two ounces of linseed oil added to his food. This makes just about a wineglassful. The animals get extremely fond of it, relish their food, and thrive in consequence."

Against the Scrub Sire.

At the annual meeting of the National Live Stock Association, which meets in Denver, Colorado, on the 24th of this month, the delegates will be asked to take action on a resolution recommending "The enactment of a law by the general government to prevent the importation of any animals for breeding purposes not of pure registered blood, and the total exclusion of all physically unsound animals; and the enactment of State laws to prevent the use of physically unsound animals, or non-registered animals, for public breeding service."

The Canadian cattle trade with the U. S. has had so many hard knocks from interested parties on the other side of the line that we hardly know whether the first clause of this resolution is a strike at the extensive trade that has been done in stockers with Canada during the past two seasons or not. It may simply be the desire of certain feeders to enhance values by shutting out the chance of range breeding in stock coming in either from Western Canada or from Mexico. Such a law, if passed by Congress, would only affect female stockers, and that perhaps would be a blessing to this country, because females would then be retained here as breeders, and the number of our stock would increase more rapidly. Under present conditions the tendency is to sell off females as well as males, and thus the possibilities of keeping up the numbers of the breeding herds are somewhat diminished.

In regard to the last two clauses of this resolution it will be safe to say that most breeders will endorse them. All will agree that nothing but a pure bred registered sire should be allowed to stand for public hire, i. e., to accept a service fee. Such a law may seem harsh, but we believe it would be for the best interests of the stock industry of the country. When it comes to a private herd, the owner has the right, of course, to maintain any kind of a bull he likes at the head of his herd. If there was any way of preventing by law the use of grade sires in private herds we would give it our support, because the good results that would follow the universal use of pure bred sires would be immense and more than counterbalance any evil that might be felt in the first operation of such a law.

The settlers on the south side of the Cypress Hills complain bitterly of the encroachments of range stock from the American side, and allege that unless protection is afforded them by the Dominion government they will have to abandon the district altogether.

The present indications are that the annual meeting of the National Live Stock Association of America, which is to be held in Denver, Col., on Jan. 24-28, will be the largest meeting of stockmen ever held. The membership now numbers several thousands and represents more than 8,000,000 head of stock, worth nearly \$200,000,000. A good programme has been arranged for.

H. Benallack, butcher, Winnipeg, was charged the other day at Medicine Hat with having contravened the new brand ordinance by shipping cattle from Walsh station, on January 10, without reporting to the inspector, as required by the ordinance. Benallack pleaded ignorance of the details of the law, having the impression that the stock could be inspected at Maple Creek on the way east, instead of being inspected at the place of shipment before shipping, as the ordinance defines. The magistrate imposed a minimum fine of \$20 and costs.

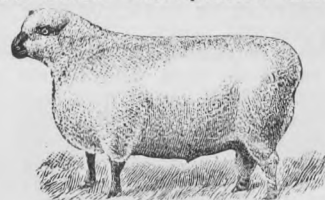
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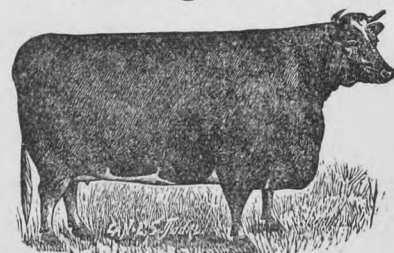
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Correspondence solicited.

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A supply of good pork always makes it much easier for the farmer's wife to set a good table during the busy season of the year. We do not believe that pork, and pork only, should constitute the meat supply for the farm home; other meats should be furnished as well. Much of the pork cured on the farm is cured very nicely, but sometimes it is very hard and dry. The following methods of curing will be found to give good results and will answer the question asked by a correspondent in our last issue. There are two methods of curing pork—brine and dry salting.

BRINE SALTING.

1. Secure a good barrel or tank, one that has never had sour meat in it. Cover the bottom of the barrel with an inch of salt, pack in your meat, the rind outward and downward; do not pack so close that salt cannot get between the pieces of meat, cover with salt over each layer, and so on until all the meat is packed or the barrel is filled to within four or five inches of the top. Lay a

an egg. Let them remain fourteen days in the brine; remove and let drain two or three days, then smoke. Soon after smoking cover and sew up in clean cotton cloth. Hams and shoulders now get a variety of treatment. Some hang them in a good dry granary; others pack them in a bin or barrel of dry oats, or bran, and some pack in dry wood ashes. The object is to keep them in a dry safe place and away from moisture.

3. Another plan is to pack all the meat, as recommended in No. 1, and change and re-pack at fourteen or fifteen days, then allow to stand ten days more, then take all out, drain, and smoke. Sew up sides as well as hams and shoulders in cotton cloth and wrap in paper; then store in a cold place free from moisture. Those who practice brine salting claim that the meat has a juiciness and richness that is not found in dry salted meat, due, they claim, to the natural juice of the meat being held in it by the brine salting. Nothing escapes and the brine penetrates every section of the meat.

DRY SALTING.

When the meat is ready for salting, place it on a board or table on an incline so as to run off any brine that forms. Pre-

Possibilities for Western Farmers

The beginning of the new year is always a time for taking stock and making good resolutions for the future. It would be well for the farmer to take stock of the prospects that lie before him. [What are the possibilities which the coming year and the ones to follow present to him? What new avenues of work and profit do they open up? In this connection we would call the attention of our numerous readers to the letter on "Manitoba Farm Produce" by "Dairyman," in the Correspondence column. It is a thoughtful letter, and should be carefully read by every farmer. There are suggestions in this letter to set any farmer thinking seriously as to whether he is embracing as fully as it is possible for him to do the possibilities that lie before him.

It must not be forgotten, of course, that the great majority of the settlers of this country started with small means and had to adopt a line of work most suitable to their conditions. Wheat growing requires the smallest outlay of capital, and by it many farmers have gained a good home and acquired a competence for old age. It has been found so successful that farmers are loath to change from it, and perhaps no wonder, for they cannot at pres-



View on the Farm of F. Mylimakis, near Whitewood, Assa.

cover of clean boards on it, with a weight, such as a stone, on top to hold it down. Now make a brine, strong enough to bear up an egg, from clean salt and water, and cover the meat three days after packing. Allow to stand for six weeks, then unpack and lay the meat on a board to drain. Put the brine in a wash boiler on the stove and let it warm up slowly. Skim off all scum that rises, and do not let it boil until all the scum is up. Make up the brine to enough to cover the meat. Then rinse out the barrel, re-pack it, and when the brine is cold pour it on the meat. If always covered with brine the meat will be sweet and nice for more than a twelve month. Never let the brine sour, and change at once, if there is the least suspicion of sourness. Some prefer to add one ounce of saltpetre to the brine. Many good bacon curers think that saltpetre has a tendency to harden the meat.

2. While the whole carcass can be cured as given in No. 1, many prefer to treat only the side pieces in this way. The hams and shoulders are placed on a draining board, well-rubbed with salt and some fine saltpetre worked in around the centre bone and over the ends. They are allowed to lie for three or four days; then all bloody salt is cleaned off, and they are then packed, rind downward and outward, in a clean barrel in brine that will carry

pare a mixture of six lbs. of salt, four ounces of saltpetre, and from four to six lbs. of brown sugar for each hundred lbs. of meat. The salt and saltpetre should be thoroughly pulverized. Rub well into the meat by hand. Turn the meat every three or four days, rubbing in more of the salt mixture. Two weeks, possibly three, are required for salting the pork, depending upon the weather, dry weather requiring a longer time than when it is moist. Then smoke the meat. Some recommend rubbing bran into the flesh side of the meats before smoking them. When smoked, sew up in cotton cloth, and some then whitewash the cloth with a lime wash, colored a light yellow with ochre. Smoking the meat requires about two weeks' time. Good hard wood makes the best smoke.

Where farmers have no smoke-house, they should try keeping the meat in brine altogether, or it could be kept there until spring, and then taken out, dried and smoked.

The third annual meeting of the American Tamworth Swine Record Association will be held at the office of the Secretary, Flint, Mich., at 1 o'clock a. m., Monday, February 20, 1899.

ent see how they can make as much money any other way or make it as easily, either. There is another aspect of this subject which we wish the farmers to consider. No shrewd capitalist would invest his money in a business whose plant lays idle six months in the year. If he did, it would have to pay dividends in six months large enough to make a good one when spread over 12 months in the year. No matter how good the dividends, it would not be long, however, before such a capitalist would look up some side business to keep his plant going the other six months, and in fact all the year, even though it curtailed his other business a little.

Wheat growing affords work for less than half the year. The dividends are generally good for six months, but when spread over twelve months they frequently are very small, often irregular and not to be depended upon. The question comes, then, what can be added as a side line which can be taken up during the remainder of the year, or, better still, continued through the whole year, even if it curtailed somewhat the amount of wheat grown. New lines of work, with good returns for each, present themselves for choice, stock raising, hog raising, dairying, poultry raising and fattening, all of which present good openings. Any one

of them, or several combined, could be taken up with advantage by the farmer. Study the tables given in connection with the crop bulletin, and the letter by "Dairyman" in last issue. Manitoba has not consumed all of the amount of products imported. Winnipeg business men are doing a business in the west which requires them to import these amounts of goods, which they would only be too pleased to buy from Manitoba farmers if they could.

Wheat growing is one of the lowest rounds in the ladder of agriculture, for the raw products of the soil are sold direct from the farm, carrying with them their fertility. It does not offer the scope for the employment of skill in manufacturing the raw products of the farm into finished ones, that is presented by several other lines of work. As our farmers gain a better footing, it will be well for them to launch out into higher and more advanced systems of work. The possibilities before the farmer are very large and promising. We hope in the new year to see greater effort made to supply those markets that lie at our doors, and which can be supplied without materially reducing the present returns from grain growing, and thus greatly increase the total receipts of the farm.

Among the Breeders.

J. A. S. Macmillan, Brandon, has sold a couple of Shropshire sheep to the Barnardo farm at Russell.

The stallion Ingmanthorpe Victor has been sold by Knittel Bros., Boissevain, to Frank Walker, Souris.

Of 51 Shorthorns exported from Britain in November, 1898, Canada took 27, the Argentine 23, and the U. S. 1.

J. G. Barron, Carberry, is in Ontario looking after more pure bred stock. He recently sold a fine yearling bull to Thos. Lachler, of Glenella, Man.

John Renton, Sr., Deloraine, has bought H. L. McDermid's young bull a prize winner at Winnipeg and Deloraine. This is a grand bull and he has gone into good hands.

Canada last year sent to the States close on 80,000 cattle, nearly all stockers. It is now pretty certain that money will be lost on those cattle by the purchasers, the price of feed having gone up.

A. B. Potter, of Montgomery, Assa., writes: "I have bought back the young sow Brampton Lassie to strengthen my herd of Yorkshire swine. She is a daughter of Brampton Baconer, the second prize sow at the Industrial."

R. K. Smith, Oak Lake, is well known as a breeder of high grade Shorthorns. One fine heifer that was shown at Oak Lake will be three years old in March, and has already had three calves—one in 1897 and twins in December, 1898. He thinks that pretty fair for Manitoba.

Manager Jas. Yule, of Prairie Home Stock Farm, has gone east to secure another lot of pure bred stock. Several recent sales of cattle, sheep and swine have been made, the most noteworthy of which is the sale to David Allison, Roland, of Jubilee Queen and Daisy of Strathallan, along with two young heifers. Some others have gone to Huff Bros., McLean, N. D., previous buyers of Shorthorns. Several sales of sheep and swine are also reported.

R. McKenzie, Maple Lodge Stock Farm, High Bluff, Man., writes: "I send you the following list of my sales of Berkshires during the month of December: A boar to each of the following: C.

Brandon, Souris; O. Bartlett, Portage la Prairie; C. Lyons, Montgomery, Assa.; Levi Jones, Whitewater, and J. J. Cooper, Treherne. To Jos. L. Parkinson, sow, Lady Bluff 2nd, the winner of first prize, under six months, at Winnipeg and Brandon fairs last summer and one of the herd that won the Manitoba herd prize. She has developed since the fairs into a grand type of Berkshire. O. Bartlett got a sow of a later litter from Lady Bluff that promises to be a good one. The breeding stock are doing well, and I hope to have a nice lot of young pigs for sale in the spring, as I now have the best lot of brood sows I have ever had together at one time. I will be able to supply parties wanting pairs or trios in the spring of such noted strains as Baron Lee 4th, Queen's Own, Enterprise, and Highclere; also a number of other good strains that have made the Berkshires well known in Canada. A good number of my sales have been made through advertising in the Nor'-West Farmer."

Andrew Graham, of the Forest Home Farm, Pomeroy, in sending us a change of advertisement, reports that his stock are coming through the winter nicely; the bull calves are the best lot he has ever offered. The young Berkshire sows he is offering are from good lengthy sows from the best eastern herds, also winners at Winnipeg. These sows are in pig to Black Prince, 5320, 2nd at Winnipeg and diploma hog at Carman. This young hog was bred by Thomas Teasdale, the well-known Berkshire breeder of Concord, Ont. Boars of the same litter as Black Prince won 2nd and 3rd at Toronto and 1st at New Westminster; still another won three first and one second at leading shows in Ontario. His herd of Yorkshires are well-known throughout the province. The diploma hog for the last three years at Winnipeg has been from this herd. Mr. Graham is procuring a boar pig from D. C. Flett, Millgrove, Ont. This young hog is by Look Me Over, 1st at Toronto and Belleville, 1898, claimed by his owner to be the best hog in America. The dam of the young pig is Royal Duchess (imp.), good enough to win 1st at the Royal, Birmingham, England, June, 1898. This young hog should be a great acquisition to the Forest Home herd. Mr. Graham keeps but one breed of poultry. He is thus enabled to give birds full liberty, which is necessary to produce strong, healthy birds. During the late fall shows throughout Manitoba and the Territories a large proportion of the prizes have been won by birds sent out from this farm. Mr. Graham reports that he has never been able to fully supply the demand either for eggs or birds. He is securing again this year a few of very large, well-marked cockerels from a well-known eastern breeder at a long price. See his ad. in this issue, and when writing him mention The Farmer.

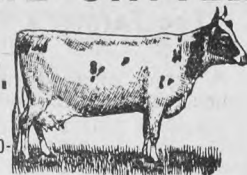
No. 5 of the Biggle Farm Library has just been issued. It is an interesting little work on swine breeding, covering every phase of raising and feeding that valuable adjunct of the farm, the hog. It is clear and concise, and shows that the author has an intimate knowledge of the subject. The book is published by the Farm Journal, Philadelphia, Penn. Price, 50c.

For a horse of 1,200 to 1,400 pounds, doing ordinary farm work, a gallon of whole oats, or its equivalent of chop, is a reasonable allowance. If he is performing very hard work the quantity may be increased. When extra heavy feeding is required it is better to feed four times a day than to give the extra amount in the three ordinary meals. Horses do better when fed oftener and less at a time.

AYRSHIRE CATTLE

AND

Fancy Poultry.



CHOICE EXHIBITION & BREEDING STOCK FOR SALE.

Winners at Toronto Industrial, London and Ottawa, 1898. A grand lot of Chicks, including L. Brahms, P. Cochins, S. G. Dorkings, Houdans, R. C., White and Brown and S. C. White and Brown Leghorns, Golden, Silver and W. C. Black Polands, Silver Spangled and G. Pencilled Hamburgs. Also Aylesbury and Rouen Ducks and Bronze Turkeys.

For Particulars write—

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W. STEWART & SON, Menie, Ont.

Holstein Bull Calves

OF THE FAMOUS TEAKE STRAIN.



If you want one, write. Can be crated and sent to any part of the Northwest.

Address—JAMES GLENNIE,
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TREDINNOCK HERD

OF

AYRSHIRES.



Winners at the leading fairs of 1898. Awarded at Toronto, London and Ottawa—16 firsts, two sweepstakes, silver medal and other prizes, in all numbering 34, among which were seven herd prizes, four being firsts, and first for four calves, bred and owned by exhibitor.

ROBERT REFOR, JAS. BODEN,
Proprietor. Manager.
2458 ST. ANNE DE BELLEVUE, QUE.

GALLOWAYS.

FOR SALE,

EIGHT BULL CALVES

Six being calved April and two June, 1898.

PRICES FROM \$50.00 TO \$65.00.

Also Heifers and Cows, at reasonable prices.
Stock all well pedigreed and of first-class quality.
Apply to

T. M. CAMPBELL,
Hope Farm, St. Jean Baptiste, Man.

FOR SALE.

Five grandly bred young SHORTHORN BULLS, ranging from 10 to 20 months old, thick, short legged fellows. Prices reasonable.

Address—ROBERT WHITE, Wakopa, Man.

PURE BRED AYRSHIRE CATTLE.

Imported from Scotland, of the very best prize winning milking families, possessing large size, robust constitution, beautiful udders and large teats. Gold Medal herd from 1893 to 1897 at leading Canadian shows. Great prize record. Not been exhibited since. Choice Tamworth Swine—The bacon pig of the day. Stock all from noted prize-winners. Choice Collie Dogs—Imported and home bred. Won all leading prizes in Canada up to 1897, also second at New York Ranch Show in 1897.

Stock all ages for sale.

R. G. STEACY, Importer and Breeder,
1876 Box 720, BROCKVILLE, ONT.

A. ELLIOTT, Pond Mills P.O., Ont.

Has for sale Oxford Sheep, Collie Dogs, White Holland, Bronze and Narragansett Turkeys, Embden Geese and Pekin Ducks, all of the best strains.



Answers to Questions.

By an Experienced Veterinarian.

As it is desired to make this column as interesting and valuable as possible to subscribers, advice is given in it free in answer to questions on veterinary matters. Enquiries must in all cases be accompanied by the name and address of the subscriber, but the name will not be published if so desired. Free answers are only given in our columns. Persons requiring answers sent them privately by mail must enclose a fee of \$1.50. All enquiries must be plainly written, and symptoms clearly but briefly set forth.

Warts.

M. G., Stonewall: "Two-year-old colt has two warts on front foot; one is as

give treatment in next issue of The Nor'-West Farmer."

Answer.—Your horse is suffering from the effects of too much grain in the diet. Begin treatment by giving a dose of purgative medicine. Seven drachms of aloes made into a ball, with one drachm of ginger and a little soft soap. Or else, if a drench is preferred, a pint of linseed oil. This should be given after the horse has been prepared for purging by feeding on bran mash for a day previous. After the purgative has operated put the horse on dry feed and give him twice a day a powder composed of half a drachm of powdered veratium album and a drachm and a half of iodide of potassium. This may be given mixed in the feed. Exercise him every day.

Locomotor Ataxia.

Wm. S., Wavy Bank: "Have a 7-year-old gelding; had fever and is very weak in hind quarters, as though he had some spinal trouble. Shoves hind end back

as an indication that the presence of bots is essential to the horse's well-being. It is said that the Indians of the north country look upon lice as the natural companions of mankind and take their absence as a sign of ill health in the person we would look upon as fortunate above his fellows. The statement that bots are necessary to the horse's welfare has just as much truth in it. Bots are parasites, "reaping where they have not sown," and there is no doubt a horse is better without them. When numerous they cause indigestion, and sometimes ulceration of the stomach and death.

Sweating in the Stable.

W. H., Wascana: "1. Would it be injurious to give a mare in foal the powders you recommended me to give in the December issue 2. What is the cause of a mare sweating all over standing in the stable? She is fed on wheat straw at night and is turned out during the day. She gets about three quarts of oats twice a day."



Cattle Ranching near Calgary, Alberta.

large as an orange, the other has just started. I had one cut off last fall, and it is now much larger. What shall I do?"

Answer.—If the wart has a sufficient neck to hold a ligature, that is the best way to remove it. Procure a couple of feet of thin rubber tube at the druggists, wind it tightly round the neck of the wart two or three times and tie it. The wart will drop off in about a week or ten days. If there is no neck to it, it may be sliced off with a sharp knife and the place cauterized with a red hot iron. This is painful and should therefore be done under cocaine anaesthesia by a surgeon. Small warts may be removed by rubbing them with a crystal of chromic acid.

Swelled Legs.

J. A. Ruth, Barnsley: "I have a horse 6 years old that was not worked until about eight months ago. He was fed very heavily and worked hard. His hind legs started swelling and are now about twice their natural size. I don't think it has turned to grease heel yet. Kindly

with the front when backing up. Can I do anything for him? Is a good feeder?"

Answer.—The condition is probably incurable. You might try the effect of a nerve stimulant such as powdered nuxvomica in half drachm doses twice a day. Increase the dose gradually until twitchings of the muscles are produced. If no good follows when this stage is reached it will be useless to continue the treatment.

Bots.

Farmer, Snowflake: "I have sometimes heard the statement made that a certain number of bots in a horse's stomach are essential to his health. Is this so? If it is, how do young colts manage to get along without them?"

Answer.—Bots are so frequently found in the stomachs of horses that have never during life shown any indication of their presence, that it is reasonable to suppose the horse's stomach is able to tolerate the presence of this parasite when not too numerous. This fact should not be taken

Answer.—1. No. 2. Your stable is probably defective in ventilation. Your mare had a heavy coat of hair as a result of her running outdoors in the day time, and that, in conjunction with a close stable, makes her sweat. You should study the ventilation question and see if you cannot improve the methods you are using. Clipping the mare would prevent sweating, but the change would be dangerous in severe weather. Singeing would be beneficial and harmless.

Incipient Ringbone.

T. B., Gleichen, Alta.: "Could you tell me what is wrong with my saddle horse, which becomes lame on one hind leg when he is ridden a few miles, and the farther he goes the worse it becomes. After a couple of days' rest he seems all right, but in four or five miles it appears again. On this limb there is a peculiar action of the joint immediately above the hoof, which comes in place with a jerk each step just as his weight is thrown on it, and makes a noise similar to a person

cracking his knuckles, only much louder—so distinct that when he is trotting it can be heard from the saddle. There is no swelling. I have always used him barefooted on hind feet."

Answer.—The early symptoms of peri-articular ringbone are appearing in this case. This form of ringbone arises from repeated strains of the ligaments which unite the bones and limit the action of the joint. The cracking noise heard in the joint is caused by the relaxation of the ligaments permitting the bones to become slightly separated with a noisy shock. The condition has not yet reached the stage when bony deposits are formed around the joint and the ringbone is recognizable by a horseman. Now is the time, however, when the disease may be checked and the parts restored to health. First see that the foot has a level bearing on the ground, that both inside and outside of the wall of the hoof are of equal height. Then see that the pastern is parallel with the wall of the hoof, raising or lowering the heel or shortening the toe, as the case requires. This is most important. Then blister the joint, and, lastly, give a prolonged rest.

Lice in Cattle.

D. M., Stonewall: "I have a bull very bad with large, dark lice; have tried most everything, but he is still very lousy. What would you suggest?"

Answer.—Remedies for lice were discussed at a meeting of the Stock Breeders' Association last year, and the opinion of the majority was in favor of the application of fish oil poured on along the spinal column and allowed to make its way down the sides. Clipping the hair off is very effectual, but entails blanketing. Kerosene emulsion is an effective remedy, but should not be applied in extremely cold weather. It is prepared as follows: Boil one ounce of common soap in one quart of water, and pour the boiling mixture into two quarts of kerosene, and churn them together vigorously for some time. When thoroughly mixed, add eight times the quantity of water and apply to every part of the animal. The favorite rubbing places on the stall should be painted with coal oil.

The World's Wheat Supply.

A short time ago Sir William Crookes, President of the British Association, created a sensation by trying to demonstrate that within the lifetime of the present generation, the world's wheat crop would hardly be equal to the regular demand of its increasing population. Very much printers' ink has been spent in the discussion of this alarming proposition, but the most effective reply has come from Sir John B. Lawes and Sir J. H. Gilbert, his colleague in the administration of the now world-renowned experiment station at Rothamstead. For the last 55 years these two have conducted experiments along almost every line of crop production, with and without the aid of natural and artificial manures, and their work has been regarded as the earliest and most thorough ever undertaken in the same line of investigation. Their reputation for practical science is unchallenged, and in the light of that reputation their criticism of President Crookes is of special value.

The letter covers more than three columns of The Times, and it is impossible, with our limited space, to give even a meagre summary of it. They show: 1. That though there is a wide area of the United States under wheat crop, a rise in price would lead to corresponding extensions of area and greatly improved production from the older lands. The wheat

yield from land at Rothamstead that has not had any kind of manure for over fifty years has averaged over 13 bushels for that long time, and the present average yield from the rich virgin soils of the States is no higher. Canada and Russia, to say nothing of new and unused areas elsewhere, could add to their production under the same stimulus of higher prices, and the present cultivated areas are circumscribed by the same cause of low prices.

2. Sir W. Crookes says the ripening of wheat requires a temperature averaging at least 65° for 55 to 65 days. The reply to this is that the biggest wheat yield of Britain was in 1854, when the average for July and August was 61°.

3. "Nitrogen may be depended on to increase the wheat yield." To this the two critics agree, but point out that nitrates need other things to balance them, and President Crookes is out in his science.

4. Soils. The carbon compounds of our crops, such as the starch of grain crops and potatoes, the sugar of the sugar-cane and of roots, etc., derive their carbon either mainly or exclusively from the atmosphere, and not from the soil. As to the nitrogen. The unmanured plots at Rothamstead contain only 3,139 lbs. to the acre, and yet keep bearing as reported. But Manitoba soil contains three times that amount, and some parts of Russia still more. It takes about 25 lbs. to the acre of nitrogen to raise 13 bushels of wheat, so that the world's store of nitrogen will serve a great deal longer than Crookes counts on.

5. Of the other necessary elements of wheat food, potash and phosphoric acid, there are seven times as much potash and three times as much phosphoric acid in new soils like Russia than are found in the Rothamstead wheat plots.

6. Scientific treatment has by no means reached its limits, and altogether the outlook for our successors on the planet is not at all so gloomy as Sir W. Crookes has made out.

"We've aye been provided for,
And so will we yet."

The long delayed report by Jas. Fisher, M. P. P., who was delegated by the Government of Manitoba to take part in the examination of the northern outlet by way of Fort Churchill, has at last been published. Mr. Fisher has long been known as an authority on the general question of transportation, and his report practically sets aside that route as a possible one for the staple products of Manitoba. This is only what could have been foretold by every one that studied the case. The further north we can go when crossing the Atlantic, the shorter is the distance in measured miles. But navigation can only go on with certainty for a small part of the year, and grain would have to wait ten months from the time it is reaped before it could be marketed by the northern route. The steamboats for ordinary ocean traffic would not suit the Hudson's Bay, and no business man would build ships and operate a railway for three months' traffic at ordinary rates of freight. All old-timers can recollect the amount of political capital that was made about election times in favor of this route, and Mr. Fisher himself had very strong faith in the scheme. In view of this fact, his elaborate and exhaustive report completely squelches the claims of the northern route and makes it absolutely certain that the route by way of the great lakes is the only one entitled to serious consideration, and reduced rates from Winnipeg to Lake Superior the only means by which the transportation question can be satisfactorily solved.

D. McBETH, OAK LAKE, MAN.
BREEDER OF
CLYDESDALE HORSES
AND
SHORTHORN CATTLE.



I have a number of promising young Stallions for sale.

My Shorthorn herd is headed by "Best Yet," bred by Hon John Dryden, of Brooklin, Ontario. A number of young stock of both sexes, all registered, are for sale, and can be recommended as first-class animals.

Correspondence solicited Prices right.

R. McLENNAN, Moropano P.O., Man.

Breeder and importer of

SHORTHORN CATTLE.

I have on hand some fine young stock of both sexes for sale, including **Royal Duke** (24640), a dark red, 3-year-old. Write for prices before purchasing elsewhere. 2474.

HOLSTEIN FRIESIAN CATTLE
AND YORKSHIRE PIGS.

A few young things for sale. Write for prices.

A. B. POTTER,
Montgomery, Assa.

JERSEY BULLS
FOR SALE.

I am now offering my stock Bull, **BELVEDERE STOKES POGIS**, for sale, also several young Bulls. Write for particulars.

WM. MURRAY,
2340 Dugald, Man.



Ridgewood Stock Farm, Souris, Man.

WM. SHARMAN,
BREEDER OF
High Class Herefords
A few early Bull Calves for sale.

Thorndale Stock Farm

JOHN S. ROBSON,
MANITOU, MAN

Breeder of SHORTHORNS. Long established, reliable pedigree; straight dealing always. Young stock of both sexes always on hand. Write early if you want them. 2185



JERSEY BULL FOR SALE.

No 50202, 2 years old in February. Solid color, black tongue and switch. Took 1st prize in Winnipeg as calf.

H. R. KEYES, Midway, Man.

Shorthorn Bulls

FOR SALE.—The 18 months' old Shorthorn Bull, **Royal Victor** (27592) winner of first and sweepstakes at Belmont fair this year. Also 6 months' old Argyle Champion (28048). Both dark red.

2473 **W. MABON, Roseberry P.O., Man.**

F. TORRANCE,
VETERINARY SURGEON

Graduate of McGill University. Diseases of animals treated scientifically. Surgical and dental operations a specialty.

Office: 214 James St., Winnipeg.
Telephone 295.



While our columns are always open for the discussion of any relevant subject, we do not necessarily indorse the opinions of all contributors. Correspondents will kindly write on one side of the sheet only and in every case give the name—not necessarily for publication, but as a guarantee of good faith. All correspondence will be subject to revision.

Top Dressing Brome Grass.

Wm. Tingey, Marieton, Assa, writes: "Believing this to be a good time of the year for farmers to relate their experiences, I would like to hear from some one who has some practical experience in top dressing Brome grass with fresh stable manure with lots of weed seeds in it. I am hauling manure from the stable and spreading it on the grass, which I intend harrowing thoroughly in the spring. Will the seeds all germinate and be destroyed by the grass, or will they lie dormant until the grass is plowed under and cultivated for some future crop. My opinion is that there will be moisture enough in the spring to start all the weed seeds. I believe Brome grass is likely to be more generally grown, not only for the hay, but also for the renovation of soils."

Answer.—We think the course you indicate should answer very well. It is one of the properties of foul seeds that they never do germinate all at once as do those of cultivated sorts, but more will sprout by following your plan than in any other way. C. E. Ivens, at Virden, has by the same process manured his land and kept it free of weeds for a dozen years or more since he caught on to the idea. If weeds show among the grass, run the mower over them when they are only a few inches high. Cattle pastured in early spring are also good, but beware of sheep.

Manurial Values.

R. G. Speers, Eagle Hills, Battleford, writes: "I have read a great many opinions in The Farmer from time to time of how to get the greatest benefit from farm-yard manure, and will now give you my way. We keep about 100 head, more or less, of cattle on the farm in winter. The calves, pure breeds, and milking cows are kept in stables, the rest run in the yard and have access to large sheds during the stormy weather. These sheds are kept cleaned out and well bedded. We draw the feed and put it around the yard and sheds, both hay and straw. The manure is taken out of the sheds and stables and put in piles outside the yard. In the spring, as soon as we get the crop in, which is about the 24th of May (I always like to be done about that time), we start at the manure. We put on men to fill according to the distance we have to haul. We put on from 30 to 35 loads to the acre, and generally haul about 400 loads, or enough to give about 12 acres a nice covering. As soon as the manure is all out the men start to spread it so as to start the plows. When the manure is spread I sow fully three bushels of mixed grain to the acre and plow that in deep enough to cover the manure, harrow as soon as possible, and roll. I have tried this plan for six years, and have never missed having a heavy crop of the best feed. We cut it with the mower as soon as the top begins to get ripe. The reason for handling it in this way is that the manure is covered while it is fresh and damp, and when the land is well harrowed and rolled it holds the moisture, all the foul seeds that have been in the manure come up with the grain, the whole is cut

before any seed is ripe, and I have that much land clean and in first-class trim for any crop I wish to put on it. Of course, it is very convenient to have the manure out in the winter, but in my opinion a great deal of the best of it is lost by being exposed to the weather either spread or in small heaps. I find Brome grass is going to be the leading grass for the west. I have tried a great many kinds of clovers and grasses, but none of them equals the Brome grass. Crops of all kinds were very good with us this year; we had close to 5,000 bushels of wheat, oats, barley, and rye from less than 100 acres. Prices, too, are fairly good—wheat, 60c.; barley, 50c.; oats, 45c. Now, if you would answer the following questions, you will oblige me and perhaps some more of your readers:—

"I find that rye is going to do well here in regard to yield, but it is a grain I have had no experience with as regards its feeding qualities. I would like to know through The Farmer how it is for horse feed, either alone or mixed with other grain, and also the amount that is best to feed. How is it as chop for cattle and pigs by itself or mixed? I have heard that it makes good hay when cut green; please give me your opinion. I know it is good to plow down in a summer fallow."

Answer.—The experience of a practical man like Mr. Speers is always interesting. But we think the best value could be got out of manure by letting it lie all winter in the sheds under the cattle, where it will absorb the urine, which is the most valuable part of the whole. As a rule, dung laid out, as you do with yours, is not likely to rot so as to be fit to spread readily, and, if it did, more of the virtue would go off from the pile while rotting than is lost by the other mode. See in this issue what is said to A. B. C. on the same point. On average good land 400 loads should go over 20 acres. In the main we like your plan all through.

Rye and its by-products, rye bran and shorts, have not been used much in America for feeding purposes, so we have to look to Europe for information on this subject. It is there used very largely for human food as well as for stock. A comparison of the analyses of rye and wheat shows that the composition of the grain and by-products are very similar, so also is their digestibility by farm stock. Professor Henry, in his admirable work on "Feeds and Feeding" (which, by the way, should be in every farmer's library), says that work horses in Germany get from two to four pounds of rye daily, in addition to oats or other concentrated feed. Rye imparts a characteristic flavor to milk and may cause bitter butter, but it is probable that a limited use of it with dairy cows will prove satisfactory. Experiments with pigs show that rye has a feeding value about equal to barley, and that the quality of the pork from it is satisfactory. Barley and rye were shown to be superior to rye shorts. The pork from rye shorts was of an inferior quality, showing more shrinkage and being softer than that from rye and barley mixed.

Cut when just coming into bloom, rye makes good hay, but we doubt very much if it will be any improvement on the green feed you are now growing.

Killing Brome Grass.

X. Y. Z., Carman: "(1) I have read and heard a great deal of late about Brome grass, and, among other things, I have heard it asserted that it is so tenacious of life that plowing sometimes fails to kill it. What has been the experience of those who have raised it as regards this matter? (2) Are there not different kinds of Brome grass? If so, which is the kind so much recommended for use in

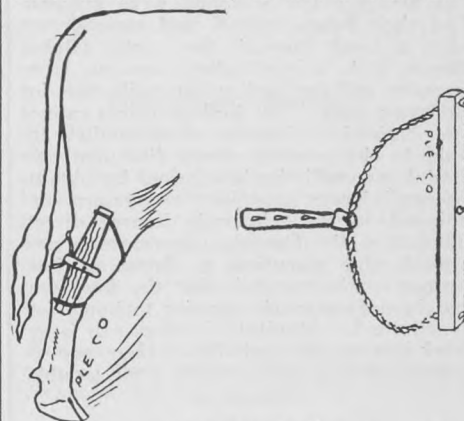
Manitoba?"

Answer.—(1) Brome grass is tenacious of life, and that is one reason why it is such a good grass for this country. But we have Mr. Bedford's word for it that it is not a difficult grass to destroy if set about in the right way. He recommends, on page 369 of The Farmer for 1898, to break the sod in the spring, the same as prairie sod, and backset it just before harvest. He claims that if the work is properly done every root will be killed.

(2) Not that we know of. It is called "Awnless" Brome grass, "Austrian" Brome grass and simply Brome grass, but there is only one Brome grass.

Device for Kicking Cow.

Reader, Elm Creek:—"Since taking The Farmer I have noticed a great many devices for breaking cows that are bad to kick while being milked, but none of them equals a contrivance that I use for simplicity of adjustment and complete mastering of the cow. It is as follows: Take a piece of oak or other strong wood, 22 inches long, 1½ inches thick and 2 inches wide. Bore ½-inch holes flatwise through it, 1½ inches from each end. Put a ½-inch screw in the centre of the piece on one side, leaving a half inch of the head projecting. Now take a piece of ½-inch rope about 1½ times as long as the stick, and passing the ends through the holes, tie knots on them. On this rope rivet a broad piece of strap about 6 inches long. Rivet it by one end, so that it will slide



on the rope, and in the rest of the strap cut three or four holes large enough to button over the head of the screw. To adjust the contrivance, place the piece of wood against the right hind leg, with the screw just over the gambrel joint, with the rope and strap to the front. Now, by putting the left hand between the legs from behind the strap can be caught, brought round the leg and buttoned on the screw head. If the rope is about the right length the loop will just nicely slip over the corner of the elbow formed by the joint. When properly adjusted, it stiffens the cow's leg so that she cannot possibly bring her foot forward to kick. Neither can she get it off. I also notice in the December issue that a good deal of space is taken up concerning the ravages of wolves among sheep, calves and poultry. I would say increase the wolf bounty by all means, so as to make it worth while hunting them. And also I would suggest that in every neighborhood three or four wolf hounds be kept, for they will do more towards exterminating the wolves than twice the number of men."

Yarrow.

C. E. P., Treherne: "I notice a paragraph in your last issue about 'yarrow.' I have quite a lot of this in my yard, and although I keep cattle, sheep and horses, I have never known them to touch it, and it will soon be a question of how to get rid of it, as it is spreading rapidly."

Good Calves.

W. E. Baldwin, Manitou, Man., writes: "I noticed in The Farmer that Alex. Wood, Souris, had a five months' old calf that weighed 500 lbs. alive. I have a heifer calf, scarcely four and a half months old, that weighs alive 526 lbs., and she never sucked a cow. Can you beat that?"

Answer.—Yes, Mr. Wood can. He still holds the record. We have just received a correction in regard to that item. The calf was dropped June 27th, and 177 days after made 500 lbs., dressed meat. It was a steer calf. Mr. Wood evidently knows how to feed.

Low Prices for Home Raised Poultry.

An Oak Lake correspondent says: "I see the papers are making quite a fuss about so much poultry coming into Manitoba from Ontario, and saying that farmers here ought to raise enough to supply the home market. I can see no money in that, for we have never been able to get more than 9c. and 10c. per pound for turkeys ready for cooking, while I never saw a turkey or fowl of any kind sold in Ontario that was drawn. Are they brought to this country in that condition and sold in Winnipeg for 10c. per pound? I should think that fowls all ready for cooking ought to sell for at least two cents a pound higher than those not dressed."

Answer.—The fowl brought into Manitoba from Ontario and sold wholesale for 10c. and 12c. a pound were plucked, had their heads cut off and were drawn with a hook through the vent. Being drawn with a hook, there was no large opening and the fowl might easily pass for undrawn ones. The highest prices cannot be obtained by farmers when poultry are sold to the country stores (frequently in trade), nor will the best prices be obtained until larger quantities are grown and shipped to the wholesale houses direct. Then, too, the Ontario raisers are paying considerable attention to fattening fowl properly; the result is that the fowl sent out here were much superior to home fattened stock. Manitoba farmers can fatten fowl just as successfully as their eastern friends, if they will take the same trouble.

To Kill Moles.

F. B. M., Solsgirth: "Please let us know how we can get rid of moles from our gardens."

Answer.—Perhaps they are not moles at all, but pouched gophers. On page 336 of The Nor'-West Farmer for 1897, is a prescription from A. H. Bastien, Rocanville, which we reproduce: "As soon as I discover that a mole has entered my garden, I find his run, and dig a space of about 12 in. x 6 in. right across the run, and deep enough to be about one inch, or so below the holes. Set a rat trap, or gopher trap, opposite the hole; put a tin or piece of board over your digging and cover the whole with earth, taking care to leave the trap free from dirt. In 24 hours the mole will be in the trap. If the trap has been buried (for sometimes the mole will bury the trap and fill the space full of earth), clean the dirt again; see that the holes are clean, and reset the trap. Any moles coming in my garden do not live more than a day or two. As soon as I discover their arrival I am certain to trap them."

Hail Insurance in the N.W.T.

W. A. Doyle, Manager of the Miniota Mutual Fire Insurance Co., Beulah, Man., writes: "In your issue of the 5th inst., in replying to the query of H. T., Wapella, re hail insurance, you say 'A Manitoba Company cannot do business in the Terri-

tories.' While you doubtless intend to give correct information, will you allow me to point out the fact that the Territorial government places no obstacles in the way of any Farmer's Co-Operative or Mutual Insurance Company or Association doing business in the Territories. The only conditions they impose are that such companies or associations appoint an attorney to represent them, resident in the Territories, make certain returns to their government as to their business, and pay a nominal registration fee. In our case it was five dollars, as it was recognized that our business as a mutual fire insurance company was largely beneficial to the farmers of the Territories in furnishing them good safe insurance at half the rates of the stock companies' combine; and H. T. may rest assured that his government will offer the same facility to the Mutual Hail Insurance Co. of Manitoba should they wish to register in the Territories. The ordinance draws the line at companies doing business "for gain," such as joint stock companies and banks, which must pay a license to their government as a matter of revenue."

Sod Stables.

Josh W. Hargrave, Glenlea: "Could you through the columns of your valuable paper give me some ideas on sod buildings. 1. In what manner are they constructed? Is any framework necessary? 2. Any part of the season better than another (i.e., wet or dry sods)? 3. Are such buildings warm? Do you consider them healthy?"

Answer.—They are built as follows:—A piece of natural sod, grown on toughish clay, is selected, and with the plow a sod about three inches thick and even width is turned, and then cut into handy lengths with a sharp spade or similar instrument. The Winnipeg contractors for sodding have a very handy implement for this purpose. Then lay out your stable and begin by setting up the door frames with a good hold into the ground. Then build 2 or 2½ feet thick and use a line to guide you. The walls should taper a little, be, say, six inches thinner at the top than the bottom. To secure the door frames, build in a broad piece of thick board half way up on each side, to which they can be nailed. If any holes should appear in the centre of the wall fill with clay, bind by laying a row of sods the cross way. The corners must be protected by putting up two posts at each. No framework is needed.

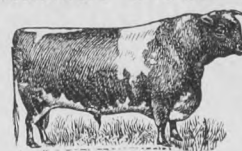
2. Early summer is the best season, and the sod does best when a little moist.

3. There can be none warmer, as plenty of pioneers can testify, and they are quite healthy, much more so than boards backed with manure. A capital example of sod work can be seen six miles west of Winnipeg on the road to Rosser.

Hog Pasture.

T. M. Scott, Morden: "1. Would like to know your opinion, or some of your correspondents', on the best crop to grow for a hog pasture. I have been told by some that rape was good. How early can this crop be sown? What is the mode of sowing? 2. What is the best plan of curing pork for next summer's use?"

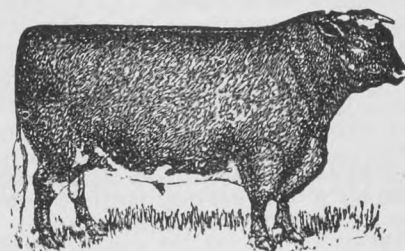
Answer.—Wheat has proved the best, so far as pasture for hogs has been tried in Manitoba, rape having been tried only in a small way. See page 488 of The Farmer for 1898. At several of the experiment stations in the U. S., and by breeders in Ontario, rape has been found a great success as hog pasture, taking equal rank with red clover. In the east and south rape is frequently sown with all the grain in the spring to make pasture after the crop is cut. We do not know of any one having tried this plan in Manitoba. We

Marchmont Stock Farm.

SCOTCH-BRED

SHORTHORNS**12 Young Bulls for Sale**At moderate prices. Also **BERKSHIRE PIGS.**

TELEPHONE 1004B.

W. S. LISTER, Middlechurch P. O.,
(7 miles North of Winnipeg.)**J. E. SMITH.**

J. E. Smith has for sale a number of the very choicest Clydesdale Stallions and Mares, Shorthorn and Hereford Bulls, Shorthorn Cows and Heifers. All animals registered. Stock right. Prices right and no reserve.

J. E. SMITH, Box 274, Brandon, Man.

Excelsior Stock & Dairy Farm.

The largest prize-winning herds in Canada, \$1,800 in prizes this year. Will deliver FREE one car of stock to any part in the Northwest Territories.

The following stock for sale:

GUERNSEYS—Three bulls and six females.**SHORTHORNS**—Three bulls.**SWINE**—Chester Whites, show and breeding stock from two months to four years. Duroc Jersey, 70 head from our Sweepstake herd. Tamworth—50 head any age. Several prize winners for sale.

Any other breed of stock selected and delivered in the Northwest at the lowest possible cost in order to make up a carload.

Terms—50% with order, balance upon delivery. Reference—Mr. C. M. Richardson, Eastern Representative of The Nor'-West Farmer.

W. Butler & Sons, Props., Dereham Centre, Ont.
W. E. BUTLER, B.S.A., Manager.

PLAIN VIEW STOCK FARM

PORTAGE LA PRAIRIE, MAN.



The home of Shorthorns, Cotswolds and Berkshires. Berkshire herd headed by the best pair of Boars in Canada, Tippecanoe and Western Boy, never beaten in a show ring. An easy winner over Perfection, a year older, for Diploma, which was an Ontario winner; and breeding sows, such as Lady Clifford, Cora Bell and two imported Highclere sows, all noted winners. A few sows and boars fit for breeding. Orders booked for August and September litters. When buying, do not lose sight of the herd that has won most diplomas and first prizes at the Industrial in 1896, '97 and '98. No inbreeding; pairs and trios not akin.

2184

F. W. BROWN, Proprietor.

McGILL BROS., Carroll, Man.,

We have a number of registered

SHORTHORN CATTLEBoth male and female,
for sale.

would be glad to have the experience of any one who has. Rape can be sown from early spring until August. It is best sown in drills 22 inches apart at the rate of from $\frac{3}{4}$ lb. to 2 lbs. per acre. The variety to get is the "Dwarf Essex," or "English Fodder Rape." Get it from a reliable seedsman, and not from a druggist. The latter generally furnish "Bird Rape," a variety useless for fodder purposes. We would suggest the following as an ideal succession for hog pasture. Brome grass for the first bite in the spring (if you haven't it now, prepare a piece for next year), to be followed with a patch of wheat, and later by rape. 2. See Swine Department this issue.

Wolves Again.

Duncan Mackay, High Bluff, who has now been over 27 years in the province, thinks that as the country gets better filled up wolves will gradually die off. At present they do more good in keeping down rabbits, gophers and mice than harm the other way. The rabbits, for example, kill no end of young trees. As a student of nature, he thinks there is a work for the wolf in balancing animal life. A man of sporting tastes could attend 1-000 sheep and kill plenty of wolves at the same time. There is force in his contention, and if ground vermin are to be kept down, the wolf can be depended on to do good work.

Don't Put Out Poison.

C. R. McF., Glenboro: "In your last issue I see a number of letters re wolves. In my opinion there is more harm done to cattle, horses and useful dogs by putting out wolf poison than to the wolves. A wolf will carry a pill for a mile or two, sometimes, and then break it and leave it for some valuable cow or horse to lick up. I have heard of two cows being poisoned in this way. My plan would be for farmers to keep a good greyhound or two, especially those who keep sheep, and we would not hear so much about poultry and sheep being destroyed by wolves. I know of one man who has killed thirty wolves with his dogs this winter. I know another man who has two of these dogs and spent last winter in catching wolves and made good wages at it, but at the present bounty it does not pay to spend time in catching them. Another good plan is to put out bear traps, cover them in winter with snow, in summer with straw, and bait with meat."

No Bounty for Poisoned Wolves.

P. G., Dauphin, writes: "I notice in the December issue that quite a number of your correspondents advocate increasing the bounty on wolves, but how is the wolf to be killed, whether by shooting, trapping or by poison? I admit that the bounty should be raised, providing the wolf was either shot or trapped, but poisoning wolves, which is so much practised, should be done away with. We have seen cases in this neighborhood where valuable dogs were poisoned by wolf carcasses left on the roadside. It is not only dangerous to dogs, but cattle as well. I would suggest raising the bounty, and when the hunter comes in with his pelt put him on oath as to how the wolf was killed, if by shooting, or even trapping, all right, and we'll give him a good bounty; but if with poison, then give him the full benefit of the law for setting out poison in a thickly settled country."

Hounds for Wolves.

A. McLay, Horse Hills, Alta., writes: "In your issue for December I see The

Farmer has made numerous inquiries to find out the reason why farmers are going out of sheep raising. It seems, from the answers given by the majority that the wolf is the greatest enemy to the sheep industry. Now, I think so myself. But as I could never think of getting along on a farm without a bunch of sheep, I have adopted the plan of keeping a good hound, and now have no trouble with coyotes or wolves. As soon as they find out there is something that can run faster and bite harder, they will leave for other parts. Very few sheep are kept around here now on account of coyotes killing them. The parties who have gone out of the business had themselves mostly to blame, as they used to let the sheep run on the prairie for weeks without seeing them. The covotes would kill them, and follow the band as long as a sheep was left, and this made it harder on those who looked after their sheep properly. I am increasing my flock every year as I increase my acreage of grain, because I find they are the only animal that will turn weeds into good mutton and wool, and the same time enrich your land. There has never been a chopping mill invented that will grind seeds like a sheep's jaw. I feed all screenings that come out of my grain to sheep, and they get fat on them, whereas you might as well try to fatten a fanning mill by pouring oats through it as to fatten hogs on weeds."

Wolf Bounty.

C. W. H., Miami: "I think it will be a good thing to raise the wolf bounty to at least \$2 again. I keep from 50 to 100 sheep, and I lose some every now and again by wolves. I could not keep them at all if it was not for the hounds I keep for hunting them. The bounty is so low now that it does not pay to lose much time on them, as it is hard work both on horses and dogs."

Wolf Depredations.

With reference to the wolf bounty question, Jas. Brown, Ellisboro, Assa., sends the following: "Yesterday three wolves hunted 18 of our cattle that they had separated from the herd. Fortunately a team, sleighs and gun were at hand. So bold were the wolves that we were able to wound two with a shotgun from the sleighs. Two of the 18 were cows, the others rising one and two years. All were Polled Angus, so might not be able to defend themselves so well as horned cattle."

Spring Plowing.

J. C. F., Douglas: "1. Would you recommend spring plowing for wheat land well manured? 2. Would you encourage sheep or cattle raising?"

Answer.—1. That depends partly on the soil and season. Rough manure under wheat keeps the land far too open. If a damp spring and the land heavily rolled after seeding, it might be safe enough, especially with rotted manure. 2. Several men of ample skill are going out of sheep on account of the ravages of wolves, as can be seen from the discussions in our columns. Cattle, perhaps, need less skill to manage than any other stock, and are as safe every way to handle.

The Exemption Act.

W. D., Rounthwaite, referring to what is said on page 553 about exemption, takes occasion to put in a plea for the principle of our Exemption Act. He reminds us that before the passing of that act creditors would mercilessly pounce upon pioneers that failed to meet their engagements and sell off all they owned, even if the

proceeds did little more than cover the costs of procedure. The one merciless creditor would in this way ruin the man's chances of doing further good to himself and the country, and beat out every other creditor who was content to wait and give the man a chance to succeed. From that point of view the Exemption Act is certainly the least of two evils. We agree with W.D. that it is an abuse of the merciful intent of that act when a debtor, under cover of its provisions, piles up all the debt he can and then snaps his fingers at those who trusted him in the day of his need, and the case he refers to seems very like that way of doing. The old rule, "Do as you would be done by," is the best kind of law everywhere.

Prison for Debt.

J. R.: "I notice in the December issue of The Farmer a notice of three men having been committed to jail for debt. How can a man pay his debts in prison? If Canada has adopted the castoff legal garments of Europe, it will be a good country to stay away from. The Farmer is improving very fast. More power to it."

Answer.—In such cases a judge of great reputation for fairmindedness, after due consideration, orders payment, usually by easy instalments. They disregard his order and he can then put them in prison for contempt of court. What Judge Ryan decides may be held as sound law and duly considerate of the circumstances of the debtor, who may, however, regard it as cruel persecution. All depends on the point of view.

Drum Heater Wanted.

T. P., Elkhorn, writes: "A friend of mine was telling me of a sort of drum that he had seen fixed on a stove pipe in a room above the stove. It had a lot of little tubes opening out of it (a sort of honey-combed arrangement). He said it threw out almost as much heat as a stove. Could any of your readers let me know where I could get one, and what the price is?"

Answer.—The Winnipeg Heater Co. of Toronto, Ont., make a most admirable attachment for this purpose.

Buyers of Hides.

W. S., Maskawata: "I see in the Market Review in The Farmer that hides are worth 6 $\frac{1}{2}$, 5 $\frac{1}{2}$ and 4 $\frac{1}{2}$ c., according to quality, in Winnipeg. Please give the name of some tanner or buyer who gives these prices."

Answer.—Carruthers & Co., Winnipeg and Brandon; The Toronto Hide Co., and F. Lightcap, Winnipeg. You can save freight by selling at Brandon, as Winnipeg prices can be obtained there.

Quicksand Wells.

H. Cater, Brandon: "In the November issue of your paper I answered an inquiry about sand pumps. In that letter I offered to give any information I could, free of charge, as to the best method of overcoming the difficulty of quicksand in wells. Since that time I have received many letters asking for information, all of which I have answered to the best of my ability. The great difficulty I have to contend with is the lack of information about the well, for which I am asked to prescribe a remedy. Now, I would like parties writing me on this subject to give me the following facts: 1. The depth of the well. 2. The depth of the water. 3. The diameter of the well at the bottom crib. 4. If it is a round or square well. It is very important that I should have these facts."

Good Butter Yields.

G. L., Melita: "I give the returns of three cows for the past year, not wishing to take any credit to myself for what I think are very satisfactory returns, but to try and induce the readers of The Nor'-West Farmer to give their experience when only having very limited means to work on. One cow I bought on April 13; she had then been milking six weeks; another calved on July 12, and the third on July 15. From April 19 to December 31 they made 447 lbs. of butter. They are now making a little over 12 pounds per week. They are all ordinary grade cows. One of them is a grade Holstein. I bought her with her first calf on May 6, 1894, and she has only been off milk four weeks from that time until last spring. She is now giving 12 quarts per day. We feed them boiled pigweed seed twice a day and for the past two weeks have given a quart of bran and shorts with it. We take a good sized box and fill it with wheat chaff and pour a pail of boiling water on it; this, with six fair sized turnips, we give directly after milking. We find that since we have added the bran and shorts they give about 1½ to 2 lbs. of butter per week more, which more than pays for the bran and shorts. We sell most of our butter to private customers at 20 cents per lb. all the year round. I bought my farm on the crop payment plan—this is, I give one-third of all the crop as a payment on the place, which hinders me from growing green feed, except a small patch for roots and garden. I had thought of growing some green corn, but I tried a small patch last year, which did well till just as it was coming out in the tassel, when we had a high wind that broke it nearly all down. I would like to know if others who have tried it have had the same experience, or if a stronger stalked variety than Cory corn can be had."

Veterinary Enquiry.

Reader, Manitou:—In reply to an enquiry made through the Veterinary Department in the December issue by "Bob, Kinistino," a prescription is given for scratches, which includes half an ounce of "oil of cade." I have asked one of the local druggists to fill the prescription and he says that such a drug is unknown to the pharmacopoeia. Is he wrong, or is it a mis-print? What should it be?

Answer.—Your druggist is wrong, and wants a new pharmacopoeia or a more intimate knowledge of the one he has. Oil of cade is a thick, black, tarry liquid obtained by destructive distillation of the inner bark of cade, a species of juniper (*Juniperus oxcedrus*) of the Mediterranean countries. It is used as a local application in skin diseases.

Storing Ice.

Walter Mann, Minnedosa: "The following is my experience in storing ice. I do not think there is any better plan for saving ice than storing it in an ice well. Dig a well about ten feet deep and about seven feet square. Line it with rough slabs, or straight poles. Have a rain-proof cover for it, or build a room over it and your ice will keep just as well as if you had spent \$100 on an ice house. No sawdust is needed to pack your ice in, but I find it is better to have about three or four inches on the top of the last layer of ice, but even this can be done without, if your cover fits well."

Note.—Such an ice house should work well. We would suggest digging one in the summer and then, instead of lining it with lumber use cement and cement the sides. If a house is built over the ice, it should be well ventilated. We once read of a plan for storing ice that this calls to mind. A farmer selected a suitable place

on the north side of his buildings, as little exposed to the rays of the sun as possible. He then erected a fairly close box of boards 8x10 and about 8 feet high on the ground after clearing away the snow. On a very cold day he splashed small quantities of water over the side walls. It froze as it fell and he soon had a water-tight box. Into this he put water from his well, and as it froze he kept putting in more, and thus in a short time he had a solid block of ice the size of his original box. The sides of lumber were then removed, set out 18 or 20 inches, and the space between the new walls and the ice filled with sawdust, failing that, chaff or cut straw. The top of the ice block was also well covered and a suitable roof put on to turn rain and sun, but plenty of ventilation was allowed under the roof over the ice. As soon as the frost was out sufficiently the sides of the ice house were well banked at the ground to prevent any air getting to the ice.

How to get a Cow to take to a Strange Calf.

Frank Newell, of Morden, tells us how he used oil of rhodium the past season to make a cow take to a couple of strange calves which were being put upon her. The cow had been milking several months when the transfer was made, and she fought the calves very viciously until the treatment was applied. He took about half a dozen drops of the oil in a thimble or spoon and put it upon the cow's tongue and rubbed a few drops on the back of each calf. This treatment was used twice and the cow speedily became so much attached to the fostered twins that she would break out of the pasture field to get to them. Perhaps with one application the results would be as good and the cow would stay in the field. This oil is a contraband substance, sometimes used for catching fish, but it serves a very useful turn when it catches so much larger game. Oil of rhodium is said to be the oil from the wood of *Convolvulus Scoparius* or *Genista Canariensis*. An oil of rhodium is sold to rat-catchers as a lure for rats, which is made by mixing one part of oil of rose with 20 parts of oil of copaiba. This is perhaps the mixture obtained when oil of rhodium is purchased. It is also used for attracting wild animals.

Oak Lake Farmers' Institute.

Isaac Young, Oak Lake, writes: "The monthly meeting of the Farmer's Institute was held on the 7th inst. The secretary gave a statement connected with last year's plowing match, which, on being audited, was found correct, with a satisfactory balance to the credit of the committee. All the members present expressed approval of the plowing match, and the same committee were appointed to arrange for one during 1899. R. K. Smith gave an excellent paper on "Stock Raising." This was a very instructive paper, and so much appreciated that after a fair discussion Mr. Smith was requested to read it over again, and the various points were all re-discussed. The paper was based on the principle of always using a pure bred bull, and then, by judicious feeding and good management, keep the young cattle always growing until 2 years old, when they should weigh 1,000 to 1,100 lbs., and can be disposed of at 3½ to 3¾ cents per lb., thus realizing \$7 to \$8 more per head than under the ordinary system of rough feeding and keeping cattle until 2½ years old, the additional price and the early maturity being a good profit on the extra care and feed of the animals. A special meeting will be held on the 28th inst., when Rev. Mr. Burman and Hugh McKellar, of Winnipeg, will speak on practical subjects. Admission free, and all invited."

PROGRESSIVE, PUSHING PEOPLE

Demand up-to-date railroad train service. Two fast trains leave Minneapolis and St. Paul daily via Wisconsin Central Lines for Milwaukee, Chicago and Eastern and Southern points, elegantly equipped with Sleeping, Dining, Cafe and Parlor Cars. Ask your nearest ticket agent for further information.

JAS. C. POND,
Gen'l Pass. Agent,
Milwaukee, Wis.

BRANDON PUMP WORKS.

H. CATER, PROP.
Successor to J. M. Reisberry

Better than Klondyke Gold:
A GOOD PUMP
that will not freeze in winter.

We make a specialty of large Pumps for watering cattle—5-inch bore iron cylinder, porcelain lined.
All kinds of Pumps repaired.
Office and Factory, Ninth St., opposite Northern Pacific Station.

Address—H. CATER,
Brandon, Man.
Write for Prices.

Agent for Myer's Pumps with brass lined cylinders and glass valve seats.

TUBERCULOSIS IN CATTLE.**IMPORTANT TO FARMERS.**

The following letter is sent by the Department of Agriculture at Ottawa to persons desirous of having their cattle tested for Tuberculosis, and sets forth the conditions under which the Dominion Government undertake to apply the Tuberculin Test free of charge.

DOMINION OF CANADA.
DEPARTMENT OF AGRICULTURE.

OTTAWA, 1898.

DEAR SIR,—In response to your letter of the I beg to say that the following are the conditions upon which the Department applies the Tuberculin test to cattle:—

When a person makes application to the Department to have his cattle tested for the purpose of ascertaining whether any of them are affected with Tuberculosis, a Government Inspector is sent to test, and all expenses in connection with this are paid by the Department. The owner must accept all responsibility for the result of the test. The Government do not order the slaughter of diseased animals. No compensation will be given in cases where owners slaughter of their own free will. If any of the animals are found to be suffering from the disease, they will have to be isolated and the shed or corral in which they are kept will be quarantined. The owner will then be prohibited from selling any of them or their raw products. Should he desire of his own free will to slaughter them and dispose of their carcasses for food he will have to consult the local authorities as to whether he will be allowed to sell them. The premises in which diseased animals have been must be cleaned and disinfected to the satisfaction of the Government Inspector, as recommended on page 11 of the Farmer's Bulletin on Tuberculosis, a copy of which I enclose you. The premises in which the diseased cattle have been quarantined will also have to be disinfected and cleaned, as mentioned above, after the animals have been disposed of. When the Minister of Agriculture receives a certificate from the Inspector that the disinfection has been done to his satisfaction the premises will be released from quarantine. No application will be considered unless the owner agrees to submit all his cattle to the test.

If an applicant refuses to have his cattle tested after having made formal application, he will be charged with and will have to pay whatever expenses may have been incurred by the Department in connection with the sending of a Veterinarian to make the tests.

Upon your signing and returning to us the attached form of request a Government Inspector will be sent to test your cattle.

Yours truly,
W. B. SCARTH,
Deputy Minister of Agriculture.

To
Ontario:
To the Honorable the Minister of Agriculture for Canada, Ottawa,
DEAR SIR,—I hereby request that my entire herd of cattle, consisting of—

..... Bulls,
..... Cows,
..... Steers,
..... Heifers,
..... Calves,

be tested for Tuberculosis with Tuberculin, and I hereby agree to conform to the Government conditions as expressed in their letter dated which I acknowledge having received.

The nearest railway station to my premises is
on the line of the Railway Company, and if I am notified when the Inspector will arrive at the station I will meet him and drive him to my premises and, when the testing of my animals is completed, will drive him back to the station free of charge.

Signed
Date
Address

English Berkshires—B. P. Rocks.

Brood Sows.—Prize-winners (1 imp. from England). Stock Boar.—Son of Snell's Highclere 9th, 1st at Toronto '97 and '98, also full brother to sow which took 1st at Toronto in '98, under 1 year.

For Sale.—Young Boars fit for service, one a grand one; also young pigs not skin.

JOHN LAHMER, Carrville P. O., Ont.
Station & Telegraph Office—Richmond Hill, G.T.R.

Line Fence.

A Subscriber, Miami: "If I put up a line fence between my neighbor and myself, and he does not want to fence at present, can I make him pay for half the fence when he fences his farm? Supposing the fence is five years old when my neighbor fences, what about wear and tear on fence?"

Answer.—The law on this point is very plain. Whenever your neighbor fences the rest of his land, you write him, stating the value you put on his share. If he questions your valuation, it must be settled by arbitration in the usual manner, each appointing one man, who choose the third. The value of the fence at the time you make the claim is the point to be settled, and he must pay his full share.

Legal.

C. B.—"I give a chattel mortgage on a beast as security. Two years and ten months have elapsed since then. I have killed the beast and sold the quarters, offering to pay the amount raised to the creditor. He tells the buyers that they must pay the money to him, or, if they pay it to me, he will make them pay it again. I understand that a chattel mortgage must be renewed every two years. This chattel mortgage has not been renewed; anyway, I have not signed anything. Has the creditor any hold on me, and can he make the buyers pay the money to him?"

Answer.—A chattel mortgage can be renewed by the mortgagee without your signing anything. You say you have offered to pay the amount to the creditor; why not pay him? The creditor cannot make the buyer pay him, unless the creditor sues you and garnishes the buyer.

Sunlight in Buildings.

An Old Subscriber, Shoal Lake: "I would like your ideas about placing farm buildings. In what direction should the stables and yard open?"

Answer.—Buildings intended for stables should be set in such a way as to catch all the sunlight possible during the cold months of the year. Place the windows so as to let in as much sunlight as possible. Instead of mean little squares of about 20 inches, set long distances apart, plan to have much larger ones closer together; in fact, most stables want fully three times the amount of light they have now. Arrange your buildings in a hollow square facing the south, or on the two sides most exposed. There should be no doors, or as few as possible, on the exposed sides. Buildings set out in this way will accord with the best science of the day, we think, as well as good common sense. Sufficient regard has not been paid to admitting plenty of sunlight into farm buildings. Even the buildings at our experimental farms are not altogether free of this defect. Very little, if any, direct sunlight enters the cattle stable at Guelph, although Hon. Sydney Fisher said recently that that institution could give pointers to all creation on some things. The buildings on some of our Dominion farms are not altogether free of the same defect. The health of our herds demands more sunlight in the stables. Of its beneficent influences we cannot do better than quote Prof. Robertson, who says:—

"Bacteria grow very fast away from the light. In fact light checks the growth of most species and the direct rays of the sun kill (with but few exceptions) all forms of bacteria and even spores, and kill them rapidly. Sunlight is our great natural germicide. There is then a scientific basis for the housewife's placing her pans and other dairy utensils in the sun. She has

been calling in the sun's aid to add to the effectiveness of her cleansing. The cheese and butter-maker as well might in like manner make use of this important adjunct to cleanliness. It is in the dark places that bacteria flourish best; and to this fact may be ascribed much of the unhealthiness of poorly lighted stables, cellars and the like. Of course, we have also to consider in many of these cases dampness and filth as well. Sunlight dispels the one and shows up the other, and as we in Canada see much of the sun we might employ it more."

Spreading Manure in Winter.

A. B. C., Rosebank, Man.: "Sometimes I see recommended in your paper the plan of spreading manure in the winter just as it comes from the stables. (1) Do you not think that this scheme is objectionable in that it does not destroy weed seeds as rotting does? (2) Also, that where there is snow on the land a large part of the manure is washed away and only the straw left? I would like to see the opinions and experience of some of our farmers who have tried this plan."

Answer. 1. If the manure is plowed in as soon as the frost is out it is probable that many of the seeds would not be destroyed, but lie under ground till next time that land is plowed. But if the manure is spread on grass, no evil and much good will follow as the experience of C. E. Ivens, Virden, for the last twelve years very clearly shows. Or, if it is spread on stubble now, harrowed when the frost is out of the manure, but not out of the ground, and let lie till the middle of May, then plowed in and the land sown with barley, that course will meet all objections. The damp seeds in the manure will open under the warm spring sun and all the seeds from last year's crop among the stubble will also germinate. The rough manure will be broken enough to plow in well, and do good to the barley. Sow wheat there next year, and that, too, will take profit. It is not good to plow rough manure into any land meant for wheat, which requires a firm seed bed. Foul seeds may lie in an ordinary dung heap half a century and come out uninjured. If the pile is turned to induce heat those seeds will sprout, but half the virtue of the manure is gone in the process. Therefore, spread the manure on stubble meant for barley, or on pasture, and you get more good and less loss than by any other process.

(2) Science and oft repeated practical tests clearly show that a good deal less of the virtue of manure is lost by being spread on the snow than by heating on a dung hill. A manure is valuable for its nitrogen, phosphoric acid and potash. These are all rendered more soluble, and hence more easily lost, by heating in the manure pile, and there is great danger of the nitrogen being liberated in a volatile form, especially as carbonate of ammonia, the form in which the ammonia is so often noticed from decaying urine in horse stables. When spread on the land, and even on quite a depth of snow, there is no loss of valuable plant food in the air, and it should be remembered that a little manure will color a lot of water, and if you see colored water running away don't get alarmed. The loss (if there is any in this country) from washing when spread on the field amounts to nothing and is not in it when compared with the advantage to be derived from getting the manure out when work is slack. There is another advantage and one that should not be lost sight of, that is the ability of the manure to hold snow, both when spread on bare land and on the snow. This means more moisture for the soil. Then the manure also acts as a mulch and checks evaporation of moisture from the

soil and thus tends to preserve moisture in the soil at the time when it is most needed. We cannot urge farmers too strongly to get their manure out and spread it on the land during the winter.

Are Weasels Beneficial?

H. K., Fannystelle, writes: "Are weasels generally considered as being beneficial or harmful to the farmers' interests in Manitoba? I understand that they kill large numbers of mice, yet some farmers I know lose no opportunity of exterminating them on account of their destructiveness of fowl. Could you give such information as to show whether they are our enemies or friends?"

Answer.—The natural foods of the weasel are rats, mice, moles and small birds. They kill large numbers of mice and rats, and therefore are the farmers' friends and should be protected. But it would be useless to talk protection to a farmer whose fowl a weasel was killing. The first step, then, would be to protect the fowl by closing up any possible entrance to the hen house by which the weasel may come in. If this cannot be done, then begin war on the weasel.

Frozen Potatoes.

One of our readers has had part of his potatoes frozen, and is at a loss to account for its having happened. He put them in the cow stable, the warmest place he had. It is only a boarded erection, but he covered the boards with thick carpet paper and built a hay stack against it. He cannot see how the frost got through that solid hay stock.

The frost did not get through the hay stack, and is easily accounted for. Boards are not rapid conductors of heat or cold, but frost coming on wood for six weeks running would gradually crawl down the boards and so reach the potatoes lying close to the boards. Supposing there is a wooden post supporting a roof over a potato cellar frost would gradually creep down it and affect the potatoes touching it. But it much more likely the frost came through high up, where the hay gave no protection, and crawled down the face of the boards. This any one may demonstrate any day. Cold air does not rush through a room so much as it creeps down to the floor, because being cold it is heavier. If there had been a space between the wall and the potatoes the risk would have been small. The best plan in any such case is to store the roots such as potatoes or turnips in a bin near the centre and cover them with a few inches of dry hay. So long as the air inside is kept fit for the stock the roots are safe. In this wet fall many cellars in flat districts are unfit to store roots in, but a bin inside a stable and away from the walls makes a good substitute. Roots stored close to stone walls are almost certain to freeze in time, but the air space recommended makes all correct so long as wind is kept out.

Rape for Smothering Thistles.

Enquirer, Headingly: "I am told that rape is almost, if not quite, infallible as a smotherer of thistles. I would like to get as full information as possible as to your observations, or from others who have had experience in the matter."

Answer.—The Farmer is very much afraid that the man who depends on a crop of rape to smother out thistles will indeed be disappointed in the results. On account of its wide spreading leafy surface and rapid growth, rape shades the land and checks the growth of many weeds, but the land should be comparatively clean and kept clean by cultivation until the rape is large enough to take care of itself,

then it will keep ahead of weeds and thistles and check them. The impression that rape is a good crop to smother out thistles may have gained credence owing to the statement frequently being made that it is a good cleaning crop. By that is meant, not that the rape itself has any power of cleaning the land of weeds, but that in growing it a good opportunity is presented of cleaning the land by thorough cultivation, both before the rape is sown, and while it is growing. The Farmer will be pleased to have the experience of any man who has been successful in smothering out thistles by means of rape.

The Breeders' Associations.

Young Breeder, Morden: "Would you kindly let me know the addresses of the secretaries of the various Provincial Pure Bred Breeders' Associations, the membership fees, the requirements (if any) to be eligible for membership, the time and place of the next conventions, and the privileges to which members are entitled?"

Answer.—The following are the breeders' associations of Manitoba:—

Horse Breeders' Association—Sec., W. L. Puxley, Winnipeg. Annual meeting is held during the week of the Winnipeg Industrial Fair.

Pure Bred Cattle Breeders' Association—Sec., G. H. Greig, Winnipeg. Annual meeting in Winnipeg, Feb. 7, 8 and 9, '99.

Sheep and Swine Breeders' Association—Sec., G. H. Greig, Winnipeg. Annual meeting in Winnipeg, Feb. 7, 8 and 9, '99.

Manitoba Poultry Association—Sec., E. R. Collier, Winnipeg. Annual meeting is usually held during week of the Industrial Exhibition.

The membership fee to each association is \$1 a year. The membership is open to all who pay their dollar, though only those actually owning stock are eligible to hold office. All members, of course, receive reports of the transactions of the association of which they are a member. These associations are started with the view of banding together the breeders and of advancing the interests of the stock they own.

A Trip to Winnipeg.

X. Y. Z., Ninette: "I forward you a farmer's impression of the city, derived from a trip into Winnipeg, given by the Northern Pacific Railway from the towns along the new extension from Belmont to Hartney. In the first place, it was very good of the Northern Pacific to give the trip, and it was wonderful to see how many people had moved to and about the new line—for the time being. It puts me in mind of the increased attendance at Sunday school when I was a lad about picnic time, and the steady goers always greeted the news ones with, "Smell the picnic." Anyway, all seemed to be in for a good time, and a great deal of money must have been left in the city. The usual rowdy element, who do not know enough to quit smoking and moderate their language, was, of course, present, and some of them made it very unpleasant for those who wished to sit still by continually passing in and out of cars leaving the doors open. As we expected to get in about 2 o'clock, and did not until about 5, there were many hungry ones aboard, and I, at least, made two others happy by having enough lunch for three. We unloaded (not unlike sheep) and all made for the same door. From Main street we resembled a fan as we spread out looking for lodgings. He who had friends was fortunate, because he could go there without fear of the expression falling on his ears of "All beds taken." There was one fault with the trip. It was too short. If we had had a full day in town, I am

sure we could have carried all the city away, judging by the number of parcels procured in the short time allowed. I spent the evening looking at the shops. It was dodge and skip about to avoid collision, consequently one could not get much satisfaction. My friend took me through most of the large ones, and we viewed the unattainable to our heart's content. The proprietors did not seem to mind us; in fact, rather liked it. Went to bed. Then in the morning visited the shops over again by daylight and to make sundry purchases. After waiting and waiting to be waited on, amid the jingling of bells and the buzz of cash boxes on the overhead wires, we at last had to make haste for our dinner and board the cars by 2:30. The fun (?) then began fast and furious. Some people seemed to think that they had to celebrate the event by a good drunk and make all the noise possible. However, after a fairly quick run, we got to Ninette by 11 o'clock at night. I, for one, enjoyed my outing very much, and every one seemed to do the same in their own way. Here is one who would go again, and would not mind changing my address for a day or two for that purpose."

The loss of good soil by its blowing away in winter and spring is a familiar trouble. A correspondent suggests that this loss might to a considerable extent be prevented by deep fall plowing. The soil thus brought to the top is of less value than the richer mould which would get consolidated while the subsoil only would blow away.

C. W. Peterson, deputy minister of agriculture for N. W. T., has gone out on a Farmer's Institute trip to Qu'Appelle Station, Jan. 23; Fort Qu'Appelle, Jan. 24; Indian Head, Jan. 25, and Wolsley, Jan. 26. He will be assisted by J. A. Kinsella, superintendent of dairy stations, and Mr. Mackay, of the experimental farm, Indian Head. Some good local men will also be heard from.

Two brothers named Brown are fast making a fortune out of the bounties offered by the ranchers of the Black Hills, South Dakota, for killing wolves. They are said to be earning in this way \$100 to \$140 a week. The bounty fund is raised by assessing cattlemen five cents per head for cattle owned by them. These men own a total of 60 or 70 steel traps, with which they catch the wolves and coyotes. In a little over two weeks they recently caught 105 coyotes and 20 gray wolves. They place the traps in places where wolves and coyotes are accustomed to rendezvous and take such precautions as are necessary to prevent cattle, calves and horses being caught in the traps. Scent is used to draw wolves and coyotes to their traps. This scent is very powerful, the principal ingredient being musk or something very similar to it in odor.

Last year the U.S. Secretary of Agriculture sent Prof. Georgeson to Alaska to manage experiments for the purpose of testing the fitness of that country for economic agriculture. Prof. Georgeson is a native of Denmark and has had ample experience in the same kind of work both in Kansas and Japan. He has made his headquarters at Sitka, where an experiment station will be laid out and worked in the same way as for more southern states. He has already made a good beginning in the cultivation of grains, grasses and vegetables. He grew all of these crops with great success. Alaska will grow along the coast oats, barley, flax, rye, grasses and vegetables of as good quality as many northern states produce. The interior will be explored next summer, in order that its capacity to support population may be learned.

Oak Grove Poultry Yards,

LOUISE BRIDGE P.O., WINNIPEG, MAN.

50 pairs of young Pekin Ducks from imported and prize-winning stock, at from \$3.00 to \$4.00 per pair. 100 pairs of young Bronze Turkeys, after Sept. 15, from \$4.00 to \$6.00 per pair. From prize stock. I also have young stock of different breeds for sale. Write.

I am sole agent for Manitoba and N.W.T. for GEO. ERTLE & CO.'S VICTOR INCUBATORS and BROODERS, which are made in the following sizes:

50 egg size,	\$12.50,	f.o.b. Quincy, Ill.
100 " "	20.00,	" " "
200 " "	23.75,	" " "
300 " "	32.50,	" " "
400 " "	42.50,	" " "

These machines have copper tanks, moisture pans, thermometers, egg testers, egg turners, regulators and lamps. Everything is complete, and every machine goes out with a guarantee that it will do as represented or money will be refunded.

Address—CHAS. MIDWINTER,
Louise Bridge P.O., Winnipeg.

Louise Bridge Poultry Yards

Headquarters for Thoroughbred Poultry of the following varieties:—Single and Rose Comb White Leghorns, White Wyandottes, and Black Spanish. I have a fine lot of Leghorn Cockerels for sale, both single and rose comb, at reasonable prices, quality considered.

ADDRESS—GEORGE WOOD, Louise Bridge P.O.,
Winnipeg, Man.

BUY WINTER LAYERS.

Light Brahmas and Barred Plymouth Rocks.

For want of room I have decided to sell all my LIGHT BRAHMAS, prize winners included. Young and old birds, single pairs or trios for sale from \$2.00 upwards. Eggs in season. My stock have won prizes at the leading shows in Canada.

E. R. COLLIER, Box 562, Winnipeg.

BLACK MINORCAS

J. DENNER & SON, 295 Fountain St., Winnipeg. Breeders of high-class Minorcas, will this season breed from two pens.

No. 1 Pen—headed by brother to the winner of New York Show, 1897, mated to pullets imported direct from Pitts, of England, winner at the Crystal Palace.

No. 2 Pen—Pitts' cockerel and Duff's and Roberts' hens. A limited number of Eggs for setting will be sold from these two pens. 2246

G. H. Grundy, Box 688,
Breeder of Virden, Man.,

EXHIBITION BARRED PLYMOUTH ROCKS,

SILVER LAGED WYANDOTTES & B.R. GAME BANTAMS.

Choice Breeders for sale at \$1.50 and upwards Pairs, trios and pens mated not akin. Satisfaction guaranteed. If you want the best at fair prices, write me. Buy a cockerel and improve your stock, I will give you good value. Eggs in season.

WHITE PLYMOUTH ROCKS.

Winning at last Exhibition of Manitoba Poultry Association four firsts and two second prizes. If you want good birds, write for prices.

S. B. BLACKHALL,
696 McMicken St., Winnipeg.

COCKERELS ! COCKERELS ! !

BUFF COCHINS.

Being overstocked I am prepared to sacrifice fifty splendid birds, including first prize winners at Winnipeg and Brandon Fairs, '98. Farmers and others wishing to increase size of next year's chickens cannot afford to miss this chance.

F. D. BLAKELY,
2304 285 Ellen St., Winnipeg

For Sale, Barred and White Rocks, Golden and Silver Sp. Hamburgs, White Crested Black Polish, Black African Bantams and Pekin Ducks. Write me for prices. JAS. F. McLEAN, Box 394, Brandon.

When writing advertisers, kindly mention The Nor'-West Farmer.

Live Stock Impounded.

The Nor'-West Farmer publishes every issue a list of animals impounded in Manitoba and the Territories. We would request poundkeepers to send in notices as early as possible, for which no charge is made. Animals lost or found will be inserted free of charge, to subscribers only, if description does not exceed three lines. If over three lines, 15 cents per line will be charged. Following is the list since last issue:—

Impounded.

Arthur (municipality) Man.—One mare colt, color bay, left hind foot white, white face, 2 years old; one horse colt, color sorrel, star on forehead; one broncho mare, color roan, 2 years old. R. Livesley, 20, 5, 26.

Macdonald (municipality) — One horse (broncho), color roan, about 8 years old, branded on left shoulder with a dart, left hind foot white, star on forehead. J. W. Procter, 19, 18, 1e.

Lintrathen, Man.—One bay pony, white face, branded O on right shoulder; one bay colt, about one year old. William Cruise, 35, 5, 6.

North St. Andrew's—One horse colt, color bay, two years old, no brand or mark. Richard Sanders.

Springfield (municipality) — One yearling heifer, color red, oblong piece cut out of right ear, very small horns. Edward Winearls, 22, 12, 6e.

Springfield, Man. — One pony mare, color buckskin, about 5 years old, white face and legs, dark spot on off knee, no brand; one mare colt, 3 years old, color brown or dark bay, legs black, a few white hairs on forehead, no brand. S. Parsons.

St. Vital, Man.—One mare, color red and white, indistinct brand on the shoulders, about 6 years old; one horse, color white, about 6 years old, three white legs, hip white, tail cut; one horse, color white, about 3 years old hip white, no visible mark. David Larence, Pound No. 4.

Estray.

Arden, Man.—One yearling steer, color red. W. Stockdale, 3, 16, 14.

Dauphin, Man.—One white heifer, two years old; one roan heifer, 4 years old, half circle cut out of left ear; one red and white steer, half circle cut out of left ear. Arthur Akers, 12, 18, 25.

Headingley, Man.—Seven calves—1 Holstein heifer, black and white, with bell on; 2 red-rons, 1 blue roan, 1 black and white, 1 white, 1 black, steers. Brand O M on both hips. R. G. O'Malley, Headingley, or W. Vincent, Stonewall.

Millet, Alta.—Two mares, no brand; 1 black colt; 1 bay mare, brand double rowlocks on left shoulder; one spotted mare, branded O on both shoulders. Fred Long, 28, 47, 25, w. 4.

Ochre River, Man. — Two yearlings, white heifer and gray steer. Geo. Porterfield, 15, 23, 17.

South Edmonton, Alta.—One 4-year-old bay horse, saddle-marked, little white on right hind leg, no brand, weighs about 800 lbs. Julius Ganska, 28, 51, 23.

Stonewall, Man.—A red-roan yearling heifer, piece cut off end of each horn and notched with knife as well. J. Walton.

Treesbank, Man. — One dark pony, branded T on left shoulder. Robt. Mair, 16, 8, 16.

Umatilla, Man.—One bay colt, coming 3 years old, white spot on forehead, two white hind feet. Jas. Nickle, 30, 26, 22.

Wellwood, Man.—One 2-year-old heifer. John Munro, 36, 12, 15.

Lost.

Cannington Manor, Assa. — One dark bay Canadian gelding, missing since Jan., 1898, 5 years old, broken, lot of white on

face, might have mark on left shoulder where he was blistered for sweeney. A. Hewlett.

Carberry, Man.—One large white sow, with short nose, and six spring pigs, weighing about 100 lbs., 4 white, 2 black. H. W. White.

Dauphin, Man. — One yearling heifer, mostly red, branded S on left side over ribs. Gavin Strang, 17, 25, 19.

Dauphin, Man. — A very small black pony about size of a year-old colt, white star on face and white hind foot; a small brown mare and colt; one black muley steer, 2 years old in spring. J. Cathers, 31, 24, 19.

Dauphin, Man.—One muley heifer, white and red, X on hip; one dark red 3-year-old cow. Robt. Cardiff, 14, 24, 19.

Dauphin, Man. — One yearling steer, color red and white, white face, piece cut out of under side of left ear, short horns, looks like a muley at a short distance, branded J A on right hip. James W. Allen, 10, 25, 18.

Glenlyon, Man.—One bay road mare, 2 years old, with scar on inside left leg above hock. Mrs. E. McDermid, 20, 22, 24.

Glenlyon, Man.—One 4-year-old horse, brown, white star on face, lump on near knee; one 2-year-old bay mare, white on face and two hind feet; one 2-year-old black horse, entire. McGowan Bros. 1, 25, 20.

Kildonan, Man. — Last fall, one heifer and one bull, one year old, Ayrshire. G. D. Rice, lot 18.

Oaknook, Man.—One light bay broncho horse, 8 years old, white strip across forehead, rope on neck; one dark bay mare, 6 years old, white blaze down face, one white hind foot, little piece off one ear, rope on neck; one heavy set, light bay mare, coming 2 years old, white blaze down face, 1 white hind foot. Samuel Moore.

Solsgrith, Man.—One brown filly, rising 3 years, general purpose, star on forehead and slight strip down nose; also one bay gelding, rising 2 years, general purpose, star on forehead and slight strip down nose. F. B. Miller.

South Edmonton, Alta.—One yearling reddish steer, no brand, 1 red steer coming 2 years old, brand S on left jaw; 1 reddish heifer, white under belly, straight horns, coming 2 years old, brand S on left jaw. John Stanton, 18, 52, 23.

Theodore, Assa.—One steer, 1 year and 10 months old, red, straight horns, white heart on forehead, white hair on flanks and belly. L. Stone.

Irrigation in Alberta.

The soil and climate of Southern Alberta are of well-known excellence, and the Mormon colony of Cardston has made a very promising start in combined farming and stock raising. Drouth in the growing season has up to this date been a severe check, and in view of this several schemes for irrigation have been propounded, and, as has been the case immediately to the south of Calgary, carried out thus far with decided success. The hay crops raised under the Calgary scheme have been heavy, and of rare good quality, and with time and experience on their side the projectors are pretty certain to have very satisfactory returns.

For years the Alberta Railway & Canal Co. have had a plan under consideration for a more extensive area of irrigation that is now likely to be brought into operation without undue delay. The district to be operated on lies to the south of Lethbridge, and it is proposed to take water from the St. Mary's river, near Cardston, and carry a canal a distance of 60 miles in a northeasterly direction to Stirling on the Lethbridge & Great Falls

railroad track. A government survey was made some years ago, but the company have now engaged an experienced irrigation engineer, who has executed large works of the same kind in Colorado. Detailed surveys have been going on since last July, and a partial commencement of work has already been made. It is expected that the work, when completed, will turn to good profit 500,000 acres of land, which will be gradually sold to intending settlers at a moderate price, with water supply at a moderate annual rental. Those settlers who come in early will find employment for all their spare time in the work of construction, and the opening to the western markets, through the Crow's Nest Pass, will ensure a profitable return for all they can produce. There can be no question of the productive capacity of most of the lands to be operated on, and this new and important departure will furnish practical demonstration of the value to Canada of these huge stretches of now comparatively useless pasture.

The winners of the sewing machines in the Royal Crown soap competition for the week ending Jan. 16 are: Winnipeg, Mrs. G. K. Kirkland, 638 McDermot avenue; Manitoba, Mrs. W. B. Cornock, Greenway; Northwest Territories, Minnie B. Goodfellow, Prince Albert. The Royal Crown Soap Co. will continue this competition, giving away three machines each Monday until further notice.



When a baby smiles in its sleep it is the mother's fond belief that an angel is kissing it. No woman attains the supreme joy of womanhood until she knows the caressing touch of a first-born's fingers. No woman knows the supreme sorrow of womanhood until she sees her baby in the cold embrace of death.

Thousands of women daily achieve womanhood's supremest joy, only to meet, a few days or weeks or months later, its supremest sorrow. This is because so many babies are born into the world with the seeds of death already sown in their little bodies. If a woman would have healthy, robust children, strong and able to withstand the usual little illnesses of childhood, she must "look before she leaps."

If a woman will take the proper care of her health in a womanly way, during the period of prospective maternity, she may protect herself against much pain and suffering and possible death, and insure the health of her child. Dr. Pierce's Favorite Prescription is the greatest of all medicines for prospective mothers. It acts directly on the delicate and important organs that bear the burdens of maternity and makes them strong, healthy, vigorous and elastic. It allays inflammation, heals ulceration, soothes pain and tones the tortured nerves. It banishes the usual discomforts of the expectant period and makes baby's advent to this world easy and almost painless. It insures an ample supply of nourishment. It is the greatest known nerve tonic and invigorator for women. All good dealers sell it. Say "No" and stick to it when urged to accept a substitute said to be "just as good as Dr. Pierce's Favorite Prescription."

"I had miscarried twice and was so weak I could not stand on my feet," writes Mrs. Minnie Smith, P. M., of Lowell, Lane Co., Oregon. "I took two bottles of Dr. Pierce's Favorite Prescription and now have a healthy baby and am stronger than for twelve years."

The quick constipation-cure — Doctor Pierce's Pleasant Pellets. Never gripe. Accept no substitutes or imitations.

THE NOR'-WEST FARMER

ISSUED TWICE A MONTH.
ESTABLISHED 1882.

The only Agricultural Paper printed in Canada between Lake Superior and the Pacific Coast, and issued on the 5th and 20th of each month.

THE STOVEL COMPANY,
PROPRIETORS.

CORNER McDERMOT AVE. AND ARTHUR ST.
WINNIPEG, MANITOBA.

SUBSCRIPTION to Canada or the U.S., \$1 a year, in advance. To Great Britain \$1.25 (5s. sterling).

Agents wanted to canvass in every locality, to whom liberal commissions will be given.

ADVERTISING RATES.

Transient advertisements, for less than three months, 15c. a line (each insertion). Terms for longer periods on application.

All advertisements estimated on the Nonpareil line—12 lines to an inch. A column contains 128 lines.

Copy for changes in advertisements should be sent in not later than the 27th and 14th of the month to ensure classified location in the next issue. Copy for new advertisements should reach the office by the 30th and 17th of each month.

TO OUR SUBSCRIBERS.

It is the intention of the publishers of this paper to admit into their columns none but reliable advertisers, and we believe that all the advertisements in this paper are from such parties. If subscribers find any of them to be otherwise, we will esteem it a favour if they will advise us, and we will at any time give our personal attention to any complaints which we receive. Always mention this paper when answering advertisements, as advertisers often advertise different things in several papers.

LETTERS.

Either on business or editorial matters, should be addressed simply "THE NOR'-WEST FARMER, P. O. Box 1310, Winnipeg," and not to any individual.

Look at Your Subscription Label.

When you pay your subscription, watch the name label on the next two issues which you receive. On the first issue following payment, it might not give the correct date—the type-setting machine may make an error and the proof not be corrected before mailing day. But if the date is not correct on the SECOND issue please notify us by postal card.

Look at the date label now. Are you in arrears? Are you "paid up" to the end of 1899? The label will tell you. If in arrears, please renew promptly.

WINNIPEG, JANUARY 20, 1899.

PRIZE COMPETITIONS.

The publishers of The Nor'-West Farmer have pleasure in announcing that they will award cash prizes as follows:—

1. STOCKMEN.

Two cash prizes of \$10.00 and \$5.00 will be given for the best two letters on any subject of interest to those connected with the care or raising of live stock. Each letter should contain some suggestion which may possibly be of use to other live stock readers of The Nor'-West Farmer. This should be about two columns in length.

2. DAIRYMEN.

Two cash prizes of \$10.00 and \$5.00 will be given for the best two letters on any topic of interest to those connected with dairying or dairy farming. Each letter should contain some suggestion which may possibly be of use to the dairy readers of The Nor'-West Farmer. This should also be about two columns in length.

3. POULTRY-KEEPERS.

Two cash prizes of \$5.00 and \$2.50 will be given for the best two letters on any matter of practical value connected with the keep of poultry. Each letter should contain some suggestion which may possibly be of use to the poultry readers of The Nor'-West Farmer. This should be about a column to two columns in length.

4. GARDENERS.

Two cash prizes of \$5.00 and \$2.50 will be given for the best two letters on any matter of practical value connected with keeping a small garden for profit. This should also be about a column to two columns in length.

5. GENERAL READERS.

Two cash prizes of \$5.00 and \$2.50 will be given to those who send us the best two letters on any topic (not mentioned above) of practical value to farmers and agriculturists in Manitoba or the Northwest. This should be about a column in length.

GENERAL REMARKS.

Write on one side only of each sheet of paper. On the back of the last page the name and address of the sender should be written.

All manuscript sent in to be the property of the publishers, whether awarded a prize or not. The time for receiving the different letters in all of the competitions will close on February 28, 1899.

No competitor may send more than one letter on any one subject, but may compete in each of the different subjects.

In case three or more persons send prize-winning letters on any one subject, the prizes will be awarded to the sender whose letter is first opened.

Competitors should address what they send to "The Nor'-West Farmer, Box 1310, Winnipeg, Man.," and they must be paid-up subscribers to The Farmer.

TUBERCULOSIS SCORE.

In our last issue attention was drawn to a blundering report which showed that of the cattle in Manitoba tested by Dominion experts over 49 per cent. were found to react under the tuberculin test. It now turns out that within the period referred to only seven herds out of about 20,000 in the province had been tested. Of these, three were owned by stock farmers, and every animal stood the test. Two were Winnipeg dairies. One cow out of 12 owned by an Icelander reacted, and out of a large dairy, with 44 head, 17 reacted. At a large country dairy out of 209 tested 123 reacted, showing that the trouble had gone on undetected till the disease was so obvious that the manager was forced to act, with the result just stated—another proof of the danger of keeping big herds of dairy cattle together for years. It was on this very small foundation of facts that this blundering and injurious report was based and sent forth to the public as a statement of the condition of the cattle of Manitoba. A very respectable gentleman, in discussing this same subject, has said "Figures cannot lie," but people who make such blunders and publish them in cold print as incontestible proof, are the worst kind of prevaricators, for they have not the courage to own up when found ever so far in the wrong, but do their best to lay the blame on shoulders not fairly entitled to bear it.

There is no use in trying to wink at the truth in regard to this same question of tuberculosis. There is, perhaps, no civilized country in the world that has not in its herds more or less of tuberculosis, and it is pretty certain that the test on which we at present place most reliance often fails to detect the most dangerous cases. But Western Canada, fairly tested, is not worse than any other part of the Dominion, or the States, and the man who, through ignorance or thoughtlessness, sends out reports of a contrary character, does us serious injury, no matter how he tries to evade the responsibility for his utterances.

PERILS OF FACTORY DAIRYING

Last March The Farmer drew attention to the difficulties incident to the steady maintenance of the factory dairy system in a country like this where wheat in a favorable season rolls up in a few months a pile of profit that completely eclipses the best achievements made in any other line of farming operations. There is not so much difficulty in getting a start for the factory. It is the staying power that fails us, and the empty walls and rusting machinery make a very poor asset when it is finally decided to shut down on the too premature enterprise.

In the article referred to we said:—"There is far more room for anxiety about the future of our factory dairy system than most people have any idea of. Business difficulties can be met and grappled with, we have no lack of that kind of faculty.

But unless there is roused throughout the country a stronger determination to do such justice to the factory system as common sense demands for every enterprise conceived for the nation's as well as for the individual's benefit, our factory system is bound to go to the wall, and it is not unlikely that the very men who are now doing all they can to starve it out will be among the first to realize the effects of their selfish disregard of sound public policy on this dairy factory business."

The last season's experience of the dairy interests of our province amply justifies the correctness of the above forecast. Some of the factories had hardly got well started till local storekeepers began to pay their patrons as much (in trade) for home-made butter as was going on the regular markets for creamery, and this course was systematically followed at nearly every point where a factory was running. It is even said that the patrons of one old established factory were so foolish as to make butter to be sold in trade at the nearest town for 3 or 4 cents less than it would have made if put through the factory. This may be an extreme example of unwise work, but there are plenty of factories that closed down early with less than half their previous output, squeezed out by the competition of the local stores, who would provide tubs and pay freight on butter that would be shipped the next week to the commission men for less than was paid for it to the producers. This way of doing business may suit the book of the storekeeper, but the question with us is about the wisdom of the policy of those factory patrons. There can be no doubt that the factories have done very much to raise the price obtained for the whole butter output of the province. Wherever the influence of the factory does not reach, the old prices for trade butter have been paid, the best makers getting no more than the worst. Will any of our Glenboro readers favor us with their experience on this point? It would be a valuable illustration of the working of the old system, which made butter making one of the most disappointing kinds of work possible to a western farmer's wife, who could turn out a really fine sample of home-made butter.

The demand for dairy butter for use by the railroad construction gangs all last year did a good deal to keep up the price for dairy butter, but, once the factories have been squeezed out by the storekeepers, the fictitious prices paid last year for dairy butter are bound to drop to the level of actual market value, and the patrons will once more find themselves down in the hole, with very few to pity them.

It is pretty certain that as the result of last year's discouragements several factories will start late next spring, if they start at all. Compare with them such factories as Pilot Mound and Newdale, where loyalty among the patrons has been the rule and not the exception. It will be found that by doing justice to the enterprise very satisfactory returns have been made to the patrons, and at the same time the future dairy prospects of the district well sustained.

—Jas. Riddell, M. P. P. for Lorne, has, through the papers of his district, invited farmers that have suffered loss from the depredations of wolves to send him details of their losses as early as possible that he may be able at the next meeting of the Legislature to bring up for revision its last year's action in reducing the bounty. An ounce of fact is worth a pound of logic, and those elsewhere who have suffered in the same way should call on their members to support him. The letter of W. Saunderson, in our last issue, is only one of many that ought to be written on the same subject.

—Think out your work; then work out your thoughts. This is a brief formula for successful farming.

—The Dauphin Press records a marriage that took place there a few days ago, as the result of a very lively courtship. A widow from Oregon got out there on Wednesday's train and caught the attention of a local postmaster who happened to be around. The mutually enamored pair were married next morning. Manitoba offers considerable attractions to a very varied lot of immigrants, but for marriageable females, Dauphin must, at this rate of doing business, take the cake.

—G. H. V. Bulyea, M. L. A. for South Qu'Appelle, and member last year of the Northwest Executive Council, has now become Commissioner of Agriculture and Treasurer. Mr. Bulyea has proven himself a first-rate business man, and will no doubt prove an equally satisfactory executive officer in the position his merits have won for him. His department is an important one to the west, and we trust he will display that energy and push which it deserves. The Farmer will be pleased to render him any and all the assistance it can.

—W. J. Kennedy, one of the young men who won a leading place in the intercollegiate contest for judging live stock at Omaha, has been appointed Dairy Instructor of the Farmers' Institute system in Minnesota. He succeeds W. L. Carlyle, who was recently appointed to the position of Professor of Animal Husbandry at the Wisconsin Agricultural College. Prof. Carlyle did a good work in Minnesota, and Mr. Kennedy will make a worthy successor. Both are graduates of the Ontario Agricultural College, Guelph, Ontario.

—The government of the United States continues to ship butter to the English markets, although the quality they send is worth fully more at New York than it is at London. This policy is followed because a beginning having been made to secure a footing in the British market, it would be imprudent to fall out of the market merely on account of the increased demand for good butter at home. By the middle of next year there may again be an exportable surplus of American butter, and to quit the market now would materially damage their chances in the future.

Chief Clerk McKellar says that complaints keep dropping into the Department of cases of glanders, most of which are traceable to horses and ponies imported from the west and from across the line. A \$25 pony that taints half a dozen good farm horses is not much of a bargain; yet such cases are not rare in Manitoba.

At a recent sale of imported Shorthorn cattle by John Isaac, Markham, Ont., we note that the following stock was purchased by Manitoba breeders—Bulls—Nobleman, J. G. Barron, Carberry, \$410; Jubilee, Hon. T. Greenway, 350; Prince Alpine, W. S. Lister, Middlechurch, \$425; Sir Colin Campbell, R. McLennan, Moropano, \$295; Gold Coin, F. W. Brown, Portage la Prairie, \$120. In all 12 bulls were sold. Females—J. G. Barron, Rosie 5th, \$490, and Jenny Lind 4th, \$400; Hon. Thos. Greenway, Beauty, \$260; W. S. Lister, \$315. In all 35 head were sold, of which 30 were imported direct from Scotland. The total proceeds of the sale was \$10,550, an average of \$301. A proof not only of the soundness of Mr. Isaac's skill and judgment as a buyer, but of the growing importance of the breeding industry of Canada.



Manitou.

The country surrounding Manitou is generally looked upon as being one of the leading mixed farming districts in the province. It is not exactly an El Dorado for the wheat raiser, but it is blessed with a good strong soil, and most of the farms embrace considerable good cropping land, combined, for the most part, with splendid stock privileges. The reputation the district has gained in the past for good buildings and the raising of first-class stock is not likely to be lost so long as there are as many improvements being made as have been completed the past season. There have been some very fine barns and houses built, and generally they show pretty good judgment both in regard to the plan and the kind of material used. A trip through the district gave one of our representatives an opportunity of observing a few of these and other points.

In the first place, we noticed that there are not so many cattle being fattened among the farmers this season as last for the very good reason that the growing stock has been pretty well cleaned out between Canadian shippers and the American buyers. G. Motherall and one or two others, who were feeding a drove last year, have only been able to get hold of comparatively few this season, while W. Riggs, Joseph McGregor and one or two others have taken cattle to feed for the buyers. But good herds of cows are being kept up and plenty of well-made young animals are coming on to keep up the supply. The attention, too, which is given to good breeding is quite noticeable and satisfactory. The farmers are recognizing very practically the fact that money judiciously invested in good blood is bread cast upon the waters, which will return before many days, and a few more farmers in this district have, in the past twelve months, gathered together the nucleus of pure bred herds in both cattle and swine.

Quite a number of the most progressive farmers are using the cutting-box and feeding damped cut straw mixed with a little chop and bran. This is all right where the straw is good, and is all required for feeding purposes, but where a lot of weed plants are mixed with the straw, as is the case in many places this year, it will be found poor economy to cut straw and force animals into eating a lot of rubbish. But we saw some excellent cattle about Manitou which were being fed by good farmers in this way.

In the line of barn building Joseph McGregor has a new one which combines a good many strong points, and is well worth inspection. It is 80x36, with stone stables underneath. A horse stable, including feed passage, takes 24 feet off one end, and stables eight horses. He is fitting a large strong gate to hang on hinges in the stonework behind and swing to fasten to the post of the stall furthest from the door. This will provide for the turning of a double stall into an improvised box stall at any time—a very good arrangement, we think, for one or two stalls in both horse and cow stables. Facing each other two rows of cattle occupy the rest of the stable. The end of one of these rows is cut off by a couple of cross rows of stanchions for calves. In this way stabling is provided for 30 head of full grown cattle and 12 calves. The driveway is well covered, and is set on a stone wall forming a root cellar 12x39 feet. The

stalls are provided with covered water troughs—a system, by the way, more in use about Manitou than in most other places. It certainly does away with a lot of nasty work in the way of chopping ice, turning cattle in and out in bad weather, and secures for them the privilege of peaceably drinking all the water they want without fear of freezing or of being impaled upon the horns of an aggressive brother or sister. Then Mr. McGregor has the latest in the matter of ventilation. He secures fresh air by means of a pipe which runs in from outside following under the floor of the passage, and smaller branch pipes, with small holes all about the end run up into each manger and furnish fresh air at the animals' noses without fear of a draft. Pipes run outside from either side at a height of about seven feet, and may be opened on the leeward side to let out surplus gas, etc. This system of ventilation is much liked by the owner. The stables show good planning in nearly every detail. Upstairs there are two floors, each 15 feet wide, and two mows of 25 feet each. A granary is fitted in either mow, an oat granary over the horses and one for chop over the cattle. The barn has a good strong frame and a large post runs up between the barn floors extending above the roof to accommodate a windmill. This is a good strong arrangement, but prevents a hayfork being run across from one barn floor to the other, if ever required.

W. Riggs has put up a new building which provides stabling for two rows of cattle, on much the same lines. Besides barns, there have been some good houses erected. A. Cochrane has a very nice frame house, 26x56, nearly finished.

We took a look through W. E. Baldwin's stables to see what can be made of grade Shorthorns. Mr. Baldwin does not pretend to be a pure-bred Shorthorn breeder, but he has a herd of grades, better than lots of those which boast of registered pedigree, obtained by breeding up from ordinary stock, through using a good sire and by careful feeding and handling. Many of his younger animals are beauties. A pair of yearling heifers which we were shown are about the best of their class we have ever seen. Mr. Baldwin keeps a thermometer in the stable all the time and finds it a help in keeping the temperature always right. He also keeps pure bred stock in Tamworth and Poland China pigs and showed us a fine lot of young pure bred Tamworths and Tamworth and Berkshire cross. He believes the Tamworth crossed with either the Berkshire or Poland China, makes about the model bacon hog, combining the length of the former with the early maturity and flesh-making qualities of the latter.

About four or five miles southwest of the town we called upon John S. Robson, of the Thorndale Stock Farm, who has been well known for years as a Shorthorn breeder. Mr. Robson came to Manitou in 1881, commenced breeding Shorthorns the following year, and has continued steadily ever since until at the time of our visit he had a stock of over ninety head of pure bred. His farm, which is a very large one, is situated along the Pembina river and the large tract of broken river front and good water supply provide splendid grazing privileges. There is also ample protection in the way of bluffs. The farm is not yet provided with the class of stabling which the magnitude and dignity of Mr. Robson's business demand, but the owner intends soon to make ample improvements along this line. Although Mr. Robson has not, as a rule, troubled himself much to figure in provincial shows, he has gained no small reputation by keeping good stock, by careful breeding and by straight dealing. Mr. Robson, however, is a light feeder.

He believes that heartiness does not attend high life, and his cattle, for the greatest part "dine on homely fare." As a consequence he has a strong, well-made lot of animals. In a herd of cows of the number kept here, particular mention is out of the question. They are, however, a good, strong, broad lot, with a number showing signs of considerable milking powers. Last season he had 37 calves from 38 cows, and this season has about 45 cows breeding. This speaks volumes for Mr. Robson's careful management and the general healthiness and thriftiness of his herd. His present bull, "Bismark," is about a year old and was bred in Ontario by James Gibbs, of Brookdale. He is a good long-bodied, square roan, and should turn out to be a useful animal. He was imported some time ago by Jas. Yule. There were a number of heifer and bull calves in stock of the past year's raising which were really meritorious animals. Oat sheaves, cut a little on the green side, have been largely grown for feeding. Timothy has also been grown, but Mr. Robson likes Brome better, as it makes more hay, makes earlier and better pasture, and is perfectly hardy.

Shilson Bros., of Starmound, about 20 miles southeast of Manitou, manage two and three-quarter sections, and are into the cattle business pretty heavily. At the time of our visit they were keeping 103 head and were fattening 17 head of fine ones rising 3 and 4 years. They keep about 25 cows, and mostly let the calves run with them. Last year 21 fine calves were raised. The past summer a barn was built, 46x40 feet, and is fitted underneath for stabling for 19 horses. No approach is used, and the upstairs has to be filled from outside by slings or hayfork. Only a few of the farmers through this part go into dairying to any extent, but A. Maxwell, Jas. Robertson, J. Spence, and others, are doing a good deal in stock. The first two mentioned keep a good many pigs. Some excellent new buildings prove that good farmers can do well in a good locality, though a good few miles from market.

Purvis Thomson, who lives about 12 miles southeast of Pilot Mound, is pretty well known as a breeder of Shorthorns and heavy horses. It is a real pleasure to look through his stables and to see the fine trim in which everything is kept. As a neighbor said: "This man farms—he doesn't try to farm—he farms." Mr. Thomson was away at the time of our visit, and so we were unable to secure some facts which we wanted, but a look through his twenty odd Shorthorns proved to us that good judgment and experience were being used. His 4-year-old red bull, "Caithness," purchased from Hon. T. Greenway, is in good shape, but does not evince any of the sluggishness which so often accompanies injudicious over-feeding. The cows are mostly young and are kept in good breeding trim. One white cow, Rosebud, 4 years old, which we noticed has a roan heifer calf, Minnie Bud, extra long in the body and with its great width behind, should turn out to be a good one. Some four or five young cows recently bought from R. D. Foley & Son, have come on wonderfully well and promise to make magnificent cows. One, a red 4-year-old, took first at Winnipeg as a calf, and has developed into a wonderfully broad, deep-set cow, with great measurement across hips and thighs. In Clydes he has a stableful of beauties. "Lady McArthur," a pedigreed 5-year-old mare took first at Winnipeg as a 2-year-old and 1st at Toronto as a yearling. She has a yearling mare colt which promises to be as good an animal as her mother. Besides these, a number of brown horses are pretty hard ones to beat. Mr. Thomson has added a new barn, 34x75, to his outbuildings, and now

has splendid accommodation for his fine stock.

Morden and Thornhill.

In a short trip through this district we had occasion to call upon a few of the farmers and note some of the advancements being made. The crops were very good here this year, but, on account of the unsatisfactory state of the grain market, sales have been somewhat slow, and a very great many of the farmers have held their grain in anticipation of an improvement in prices. We noted that a good many of the farmers are quietly looking forward to going more extensively into cattle and pigs, and we had a good many inquiries regarding the securing of pure bred males.

About eight miles north of Morden we called upon John S. Gibson, who has a few pure bred Shorthorns and a herd of very creditable grade stock. His 4-year-old bull, Prince Imperial, is a dark red fellow, with pretty good width, but was in rather light condition when we saw him. Prize Cherry, a red two-year-old heifer, is a pretty beast, very well made and neat. She has twice stood first at the Morden fair, and is now due to drop her first calf. Mr. Gibson expressed his intention of going more extensively into Shorthorns. He has a lot of grades of four or five crosses which would be a credit to any farmer, as well as some very nice pure bred Poland China pigs.

John Lawrence, just south of Morden, is a farmer who is in the dairy business, supplying milk to town customers. He seems to be a pretty good man for the business, and we understand is enjoying a pretty good trade. Mr. Lawrence seems to prefer an Ayrshire strain of cattle, as being the most profitable for his purposes. He keeps a pure bred bull and his cows are mostly good Ayrshire grades. He finds that they are hardy, thrifty animals and very uniform milkers. He has them come in at all times of the year. His calves are a thrifty looking lot. Speaking of the steers, Mr. Lawrence says he has found that although they do not grow to much size, they possess the quality of maturing early, and he has sold eighteen-months-old steers at \$20 each. He grows about five acres of corn each year and has found that a good allowance of corn, together with a little wheat straw and about eight or ten pounds of mixed chop and bran makes a good winter ration for a cow, and keeps her in good milking shape. Of course, the cows are warmly stabled. The corn crop is one which Mr. Lawrence liked splendidly. He has grown it now regularly for five years and puts it upon land which needs fallowing, and he finds that it cleans the land as well as though he had used no crop—and a great deal better than many farmers' fallows do the work. The amount of labor required is not very much greater than that needed for fallowing, and so the corn crop is almost a total gain.

He plows the land in the fall, harrows it once or twice in the spring, so as to start as many of the weed seeds as possible and kill them. Then the seed is sown about the middle of May, using a peck and a half of seed to the acre and putting the rows about three feet apart. He has found that this generally makes the plants a trifle on the thick side where the land is good, but it provides against misses better than if sown any thinner, and the hoe soon disposes of any unnecessary plants. The earliest varieties have been found to be the best to grow, and he believes the Early Huron Dent and King of the Earlies about as good as any. After the seed has been sown he harrows once or twice—generally once—about the time the corn is coming up. Then a few applications of the scuffer and one or two hoeings as-

sure a pretty fair crop. The more cultivation the crop gets the better it does.

Mr. Lawrence stores his corn in a rather unusual way. He leaves it in stooks in the field until it has become dry and frozen. Then about the middle of November he puts it up into stacks just as it is, without anything amongst it. This putting it in stacks this way is not so unusual, but the fact of keeping it in good shape stored after this manner is the unusual part. We have seen others this season who had piled corn together this way, only to take it out as manure. The point is this: The corn must not be put together until late—say from the middle to the end of November. It must be dry and frozen when put up, and any snow which is amongst it must be well shaken out. The corn is then put up in narrow stacks, about ten feet wide and ten or twelve feet high, and is closely watched, and in case any part starts to heat, the hay knife cuts it out and it is fed. But, by being careful to see that it is well frozen and dry before stacking there has never been any loss. One point upon which we forgot to get Mr. Lawrence's experience was as to the method of manuring which he had found best for this crop. Perhaps he will not mind giving us that, together with other pointers, in our next issue, as we feel that so many farmers are planning for the growing of this crop that the practical experience of successful growers is worth a good deal along this line.

About a mile southeast of Thornhill we noticed that R. H. Riggs had put up a new bank barn, so we went in to look through it. This barn is rather unusual in its design and layout. The main part is 54 feet long by 34 feet wide and provides two mows of 14 feet each and a couple of barn floors, each 13 feet wide. An extension, the width of the two barn floors, which runs out 16 feet, forms a covered approach and provides more stabling. Mr. Riggs has no posts between the floors in this extension, and instead of using two set of doors, has put in only one pair of 7-foot doors, and a turn either way of six feet, after passing these, puts him into which ever barn floor he likes. This arrangement necessitates the building of only one outside approach, and there is no difficulty in handling the barn doors. The roof is sloped up from the ends, but a small gable, with a window just under the peak, lets in a good deal of daylight. The frame is a little on the light side, the posts being made by spiking a 2x4-inch scantling on either side of a 2x6, and the owner is a little sorry now that he has not used 6x6-inch timber for posts. However, he thinks the frame so solid that he intends to put a windmill upon it.

Underneath, the stables are arranged for two rows of stock, using the east end for a horse stable and the west end for cattle. The animals stand facing the walls, with a passage in front, and a good deal of room behind. The space under the driveway makes a warm pig pen. We think where a stone building is used for hogs, that some boarding should be used inside to prevent the animals lying up against the cold wall. There are a number of good windows in the basement wall, and lots of light finds its way inside. The whole building is well made, and when painted and surmounted by a windmill will be quite convenient. Mr. Riggs keeps four very nice brood sows, and is going into raising pigs. An implement building, 24x36 feet, with 8-foot posts, is regarded as one of the best investments about the farm, and Mr. Riggs thinks that in the last four years it has about paid for itself.

A few miles west of Thornhill we called upon Albert Lawson, who will be known to some of our readers as an exhibitor of horses at the Winnipeg fair. He has 16

horses on the farm altogether, ranging from heavy draft to roadsters. His heavy team took second place last season. Besides this he took third and second place with a roadster brood mare and colt. But the quality is not confined to a few show animals, as the whole number are a most creditable lot. He, too, has built a bank barn the past summer, 64 x 44 feet, with 16-foot posts and 9-foot stone wall. This provides two large mows, 18x33 each, and two barn floors 14 feet wide. Downstairs the stable is well laid out. A row of four box stalls and a harness room, each 8x12, extends across one end and the doors open into a 12-foot passage behind a row of horse stalls. In front of the horses is a 6-foot feeding passage and then comes a double cattle stable, 22 ft. wide, with the inside row facing the feed passage. The other row has to be fed from behind. Stone walls run under each line of posts in the stable, and the whole is very solidly put together. The front four feet of floor in the horse stalls are paved with flat stones and the mangers are all iron trimmed to prevent horses from chewing them. The box stalls are not floored. In one corner of each of these, and alongside of each door is a feed rack and grain trough, which is fed from the passage-way. Under the racks are small three-cornered bins, three of which are fed by spouts running from above, and the fourth of which is used as a handy place to keep pails, forks, etc. These, together with a few boxes built into the stone wall for combs, etc., and rings put in handy places for tying animals, besides other small conveniences which a little forethought can always provide, help to make up a pretty handy stable. We had almost forgotten to mention a root cellar, 28x16, under the driveway.

Souris.

We drove out to Ridgewood Stock Farm, 2½ miles southwest of Souris. Mr. Sharman's buildings are cheap, old things, but fairly well lighted and warm, though it was 30. below the day of our visit. The stock are all in extra good condition. Their feed consists of straw, a daily sheaf of oats and a little bran for all dry stock, except the two bulls. Eight or ten cows are suckling a splendid bunch of early calves. Mr. Sharman reports sales better this winter than ever before. He says the Herefords are now commencing to be properly appreciated in this country, though it may be a few years before we can sell a Hereford calf at \$1,400, as was done at Ottawa lately.

The celebrated Cleveland Bay stallion, "Ingmanthorpe Victor," 859, having been lately purchased from Knittel Bros., of Boissevain, by Frank Walker, will make his route for the season in the Souris district. To John Sharman, Souris, is due the fact of this stallion electing Souris for his route, so that when a man of Mr. Sharman's capacity as a breeder signifies himself in this manner it is needless to say that "Ingmanthorpe Victor" should prove to be a profitable horse for farmers to use.

The steady going milling business so long established here is now more perfectly equipped than ever before and looked on as the most up-to-date local mill in the Dominion. Its equipment consists of a wheat separator, cockle separator, 3 horizontal scourers, 12 double rolls, 6 gyrators, which do the scalping and bolting instead of the old round reels, 5 taper sieve purifiers, a horizontal bran duster, also one for shorts. Instead of the dust room in common use, 7 dust collectors gather all dust from the various machines. There are four flour packers and a bran packer that will pack 100 lbs. bran into an ordinary bran sack. There is also

a 6-roll chopper. The motive power is a 250-horsepower Cross Compound Wheelock, also 50-horsepower speed Ideal engine which can be used independently for the adjacent elevator and for an electric plant: a large steam fire pump attached has sufficient power to be used for the town in an emergency. Four 60-inch by 14 feet boilers will furnish the steam, two only being used at a time. All the foregoing equipments are of Canadian manufacture, being made and put up by the Goldie & McCulloch Co., of Galt, Ont. The mill has a daily capacity of 400 barrels, and works at about half the cost of the old one.

Edna, Alta.

Messrs. Mohr & Watson have bought a C. P. R. quarter and are erecting a 50-barrel flour mill, with two sets of stones, a saw mill and blacksmith shop. Of course, the inhabitants have been asked for a bonus to secure these privileges, and in return will receive benefits, viz., lumber sawn at \$4.50 per 1,000 feet, feed ground at 7c. per bag or for the eighth, wheat into flour at 10c. per bushel or 10 lbs. wheat. The bonus list is not nearly full, and already the figures are about 2,000 bushels wheat and \$250 in cash. Messrs. Campbell, McLean, Harris, Morrison and Daly have been elected a farmers' committee to watch and secure their interests.

By the Way.

With its number of large and commodious barns and well built houses, to say nothing of windmills, the Beulah district is keeping well to the front. There have been some splendid buildings erected this year and two more windmills are now being set up, one on John Reynolds' and the other on the Fraser Bros.' farm. They should do a lot of work and earn their cost in a short time. W. A. Doyle has one that has well proved its usefulness. Every farmer should have a windmill, as there is lots of motive power and to spare in this country. W. A. Doyle has a splendid lot of Poland China pigs. They are from prize-winners at Winnipeg. This breed of pigs is gaining in favor in these parts.

It is hoped that the Great Northwest Central Railway will be extended as far as Beulah this coming summer. This would be a boon to the farmers who have much wheat to haul. I can't understand why this extension was not put through last summer; it would not only benefit the district, but would be a source of profit to the railway company, too. It would not cost much more to run another 20 miles.

John Traquair, of Welwyn, has had the misfortune to lose his most valuable Aberdeen Angus cow, the dam of many of his prize animals.

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Manitoba Dairy Convention.

The thirteenth annual meeting of the Manitoba Dairy Association will be held in the Council Chamber, Winnipeg, on Thursday, the 9th day of February, 1899. There will be three sessions, commencing at 9:30 a. m., 1:15 and 8 p. m. The meeting has been arranged for Bonspiel week, in order that members may have the benefit of the reduced rate of one fare for the round trip, which will be in force on all railways in the province during that week.

Though all the programme has not been finally settled, the Secretary informs us that the following speakers will be present: Hon. Thomas Greenway will address one session. O. C. Gregg, State Superintendent of Farmers' Institutes for Minnesota, will be present and deliver two addresses. S. A. Bedford, Superintendent Experimental Farm, Brandon, will deliver an address. C. C. Macdonald, Superintendent of Dairying, will give a talk on "Frauds in Food." The president, W. M. Champion, will have many things of interest in his annual address. Following the plan of last year, delegates have been invited from various sections of the province to give short papers on the outlook for the creamery industry in their section, together with the trials and triumphs of the past season. These papers will be fully discussed. Among those asked to prepare such papers are Wm. Grassick, Pilot Mound; W. B. Gilroy, Austin; A. R. Fanning, Newdale, and Dr. Young, Manitou.

The subjects for general discussion will be: "The Duties of Patrons to the Creamery;" "Mould, its Cause and Cure," "Are large Creameries at Central Points, where Railway Facilities are good, the Best for the Province?" "How can we Convince Patrons of the Accuracy of the Babcock Test?" Every delegate should be prepared to take part in the discussion.

On Tuesday evening, Feb. 7th, there will be a joint meeting of the Dairy and Stock Breeders' Associations, for which a choice programme has been prepared.

Every member of the association, and every one interested in dairying should make it a point to attend the meeting. Not only come yourself, but bring some one with you and make this meeting a rousing good one.

Where to Hold the Annual Dairy Convention.

At the annual meeting of the Fairplay Creamery, Pilot Mound, considerable dissatisfaction was expressed in regard to the annual dairy convention being held in Winnipeg year after year. The general opinion was that the meeting should be held at outside points and changed from place to place. In accordance with this the following resolution was passed:

"Resolved, That this meeting is of the opinion that the convention of the Dairy Association should be held at points in the province outside of Winnipeg, where they would be more likely to get a larger attendance of those interested in dairying than they would in Winnipeg."

The officers of the Dairy Association have held the annual convention in Winnipeg because of its ease of access from all parts of the province owing to the pe-

culiar arrangement of our railroads, and not from any desire on their part to keep the meeting in Winnipeg. Some years ago the experiment was tried of holding the convention at an outside point. This was at a time when the dairy movement was not as strong as it is now. The meeting was a failure and a return was made to Winnipeg. The dairy interest is stronger now throughout the province, and if it is the wish of the dairymen to hold the annual convention at some outside point, we feel sure that the members in Winnipeg will offer no objection.

There can be no doubt that the idea of moving the convention from one dairy centre to another is the right one. This plan has worked well in other places and will yet work well in Manitoba. In the past the trouble has been to get a good attendance, and it was a matter of expediency, therefore, to hold it where the largest attendance could be obtained. But we believe the time has come when the Dairy Association should take the aggressive in regard to its annual convention, instead of sitting down and waiting for the people to come to it, to take the convention to them and arouse interest enough in it to get the people to attend.

The Dairy School.

The Dairy School is in full swing again. There are 14 applications in for the Home Dairy Course and more known to be coming. As this course is only for one week, though it may be repeated, applications keep coming in up to the last week. Those taking the course now are making good progress under the able instruction of Fred. Lutley, the butter-maker, and Harry Figgott, the instructor in milk-testing. Some of those in attendance now will remain the whole term. The Factory Course for cheese and butter-makers opens Feb. 1st, and already quite a number of applications are in the hands of C. C. Macdonald, the Dairy Superintendent. The instructor in cheese making will be D. W. Shunk, who made cheese at Ste. Annes des Chenes last season. Those who want to know more about either butter or cheese making should avail themselves of the opportunity of attending the Dairy School this winter.

How One Creamery Was Made Successful This Season.

The directors of one of our Manitoba creameries found the patrons in a very dissatisfied state when the past season opened. Sales had not been made regularly the previous season, consequently the patrons never knew when they would get any money. There was a great lack of confidence in the creamery. The local price for dairy butter was good, and the removal of a large amount of cream when the creamery started would stiffen the price on the local market. Last, but not the least, of their difficulties there was a private creamery on each side of them, which gave a stated price for every pound of butter made. So disheartening were the conditions when the directors met that the great majority of them were for closing up the creamery. There were one or two stout-hearted men among them, however, that knew the creamery was a good thing, and they determined that it should run and be a success. One director in particular spent a good deal of his time during the month of May canvassing among the patrons. As during that month the supplies of cream are small, some patrons objected to sending their cream, because the expense of manufac-

turing would eat up all there was in it. This public spirited director met this by putting on his own team to draw the milk and did it for nothing. He thus secured a number of new patrons.

The directors decided to make monthly sales of their butter and pay the patrons monthly. The plan worked well and the patrons gained confidence in the creamery management. To increase the patronage of the creamery one of the directors tried a new scheme which might be tried in other places. He secured the agency for a reliable cream separator and then threw off his commission to farmers who would take one and send their cream to the creamery until the separator was paid for. This condition was imperative. The usual terms of payment were offered the purchasers and also the privilege of paying so much a month, to be taken out of the cream payments, or paid in cash, or in any way to suit the purchaser. More than a score of new patrons were secured in this way. The freight on the separators was paid by the purchasers, so that the director doing this work was only out his time.

As the result of this vigorous pushing, and the increase in the number of patrons, the cost of manufacturing was reduced nearly two cents a pound. This, along with the monthly returns, has put the creamery on better terms with the patrons than it has ever been before. The patrons are satisfied with the year's work and with the management. They are beginning to realize some of the advantages of co-operation. The prospects are now that the creamery will have double the patronage next year, and there is now a strong spirit of loyalty to the creamery. What has been accomplished in one district through the action of one or two public spirited men can be done in other places. There are other creameries in the province that only need a determined effort on the part of their directors to place them in a position of assured success.

The government winter creamery at Innisfail, Alta., under the able management of J. R. Moore, made 3,450 lbs. of butter in December. This is about double the amount made in December, 1897.

In the write-up of the Brandon creamery in last issue the statement was made that the output this year amounted to 50,000 lbs.; instead of this the output really ran up to nearly 55,000 lbs. While not as large as last year, it is a creditable showing, considering it is all obtained in a district devoted to wheat raising.

We learn that Mr. Drader, who has been operating the Bryce farm, on Sturgeon Creek, for the last three years, has arranged to start a good sized dairy business at Lacombe, Alberta, and will run 60 cows as a commencement. R. A. Lister & Co. are now shipping out to him a complete dairy outfit, including an Alexandra belt power separator and gasoline engine to supply the necessary power. Mr. Drader is a man of live capacity and his enterprise will, we have no doubt, prove quite successful.

The Mound City Churn Co., of St. Louis, Mo., are now making a churn that they assert will knock out everything else ever known in that line. It will churn easily in one minute, and, according to an enthusiastic buyer, who has become an agent, will make 25 per cent. more butter out of the same cream than can be got by using an ordinary churn. There have been cases already in which part of the casein in the cream has been worked up into the butter, but this wonderful implement throws everything else in the same line quite into the shade.

Testing the Dairy Herd.

Written for the Nor'-West Farmer by
Frank Dezhirst, Wisconsin Dairy
School, Madison.

Since the introduction of the Babcock test, the testing of dairy cows has been much simplified. Although it is now some years since the Babcock test was introduced and the principles of its operation have been described in numerous bulletins and reports, we still find amongst farmers a great lack of knowledge concerning it. But a very small proportion of the 120 students in dairying in the short course of agriculture of the University of Wisconsin have ever tested their herds, and can only guess at the relative value of different members of their herds.

In these days of close margins it is necessary for the dairyman who desires to make a living profit to know what he is getting from each cow in his herd. He can then keep and breed from his profitable cows and dispose of the unprofitable ones. It is generally conceded that a cow giving less than 200 lbs. of butter per annum is kept at a loss, but the cows of the United States do not average over 130 lbs. each per annum. This shows an enormous loss and a wide field for improvement.

To ascertain approximately what each cow in a herd is doing for her owner is quite simple. All the apparatus necessary is a Babcock tester, a reliable pair of scales, a record sheet, and as many small bottles (about 4 oz. capacity) as there are cows to be tested. The cost is small; any dairy supply house will furnish all the apparatus. Up-to-date dairymen tell us that no investment on the farm pays so large an interest. Having procured the apparatus, how shall we proceed to test the herd? Label each of the small bottles with a number or the name of the cow. Take scales, pencil, record sheet, a cup or small dipper, and an extra pail into the stable. Weigh the milk pail before milking one of the cows; after milking weigh pail and contents, and at once write down weight of milk on record sheet. Now get the extra pail and pour the milk into it, and then back into the first pail. Without delay take a little of the milk in your cup or dipper and fill the proper sample bottle about half full.

Follow the same routine with each cow. Then cork the sample bottles and store them in a safe place till next milking—keeping samples as cool as possible. At the next milking weigh, record and sample milk again, filling sample bottle this time. Now you have a record of the weight of milk and a sample of one day's milk from each cow. It is advisable to take the first sample at night and the second the following morning, so that you can test the milk by daylight. Testing the milk comes next. Get the samples, test bottles, acid and glassware together. See that all are clean; oil the tester and provide a supply of hot water. Mix each sample thoroughly by pouring from the bottle into cup and back several times. Be sure that no cream is left adhering to the neck of the bottle. Measure volume of milk required (17.5 c. c.) in pipette, let flow down the side of the neck of the test bottle, blow gently to force out the last few drops. Measure balance of samples in the same manner. Have each test bottle numbered and record numbers so that each sample can be identified.

Now add required amount of sulphuric acid (17.5 c. c.), letting flow down the side of the neck of the test bottle, so as to allow the air to escape freely from the bottle. Give each sample a rotary motion at once till all the precipitate is dissolved

and the liquid assumes a chocolate color. After mixing place each bottle in hot water to keep liquid hot till all the samples are ready. Place all the samples in centrifuge and whirl at speed recommended by the makers of the tester for five minutes. Rinse out pipette first, then add boiling water sufficient to bring the fat to just below the neck of the bottle. Whirl for another minute, then add boiling water carefully to bring the fat within the graduated scale. Whirl again for one minute. It is necessary that the fat should be liquid when the test is read, so place in hot water if there are many samples.

A pair of dividers are useful in reading the test, and quick work can be done by their use. Adjust them carefully to the length of the fat column and then place one end at zero mark of scale. The upper point will then register the percentage of butter fat present. If without dividers, note where upper surface of fat column comes on scale and then where lower surface comes. Subtract lower from upper number—the difference will be the test. Each division on the scale represents .2 p. c., but the test can easily be read to .1. Record each test on sheet in proper column.

How Often to Test.—Once a month is often enough for all practical purposes, and, if carefully done, will give an approximate record of what each cow has done for the year.

Figuring Results.—Add together the weights of the two milkings. Multiply this total by the test, and divide the result by 100. This gives the amount of butter fat for the day. The butter fat for one day, multiplied by number of days cow has been milked since last test, will give the total fat for the month. When the monthly totals are added together at the end of the year, the result will be the total butter fat for the year. An addition of one-sixth to the total butter fat will give approximately the weight of merchantable butter.

Appended is a specimen record which will help to make the description clearer.

Date.	Name of Cow.	Weight of Milk.			Test.	Total Fat For Day.	No. of Days Milked Since Last Test.	Total Fat For Month.	Merchantable Butter
		Night.	Morn'g.	Total.					
		Lbs.	Lbs.	Lbs.	P. Cent.	Lbs.		Lbs.	
Jan. 1	Spot	12	14	26	4.2	1.09	31	34 (almost)	39½ lbs

Manitou Creamery Association.

The annual meeting of the shareholders of the Manitou Creamery Association was held on January 9th. The weather was very severe, and so there were not so many members present as there otherwise would have been. Of course, it is a pretty well advertised fact that the creamery only ran part of the past season, and had to close for want of patronage. This, of course, made the Secretary's report of the year's business far from satisfactory, and, taken together with some former unfortunate circumstances, have left the horizon rather cloudy. However, the very evident and strong desire on the part of those present to carry the business into successful lines, combined with the manifest confidence in the past year's directors, seemed to augur well for the success of the coming year. The report of the Secretary, W. D. Ruttan, showed that in 1898 the creamery was only operated 48 days, manufacturing 9,320 lbs. of butter, or an average of a trifle over 194 lbs. per day. The discussion which followed struck at the root of the difficulties which

attend a few of the creameries in other places as well as Manitou, and so made it of interest. It was the general feeling that there were sufficient resources in the way of cows in the district to make the creamery a very profitable institution if the undivided support of these cow owners could be secured. It came out that after the closing of the Manitou factory a few farmers shipped cream on the train to the Fairplay Creamery at Pilot Mound and made money out of it. It was estimated that if say 600 cows could be secured butter could be manufactured at a cost of 3c. to 3½c. per lb., and that at this cost it should prove remunerative. The merchants of the town were pretty well represented at the meeting and showed a very decided anxiety to see the creamery opened again. They owned to having paid last summer more for butter than it was worth. One, at least, offered to agree with the others to buy no butter at all if the creamery was again started. Others expressed a willingness to concede to any reasonable arrangement to regulate the dairy butter trade and to throw the cream so far as possible into the way of the factory. The old board of directors, consisting of Dr. M. Young, James Fargey, and Wm. Compton, were re-elected and instructed to try to complete arrangements with storekeepers to see how many cows could be secured for the coming season, and to either rent the business or to go on and operate it, if a profitable basis can be secured. It was also brought out that the Crow's Nest Pass and one or two other markets which had bid pretty well for dairy butter last year would not likely be open this year, and so the ruling price for dairy butter would not likely follow so closely upon that of the factory make as in 1898.

Col. Curtis hit the nail squarely on the head when he said this: "It is cheaper to raise the temperature of the cow than of the barnyard." Invest in some boards and shingles and put the stable in livable condition.

Latest reports from England state that the Queen has had the tuberculin test applied to her dairy herd at Windsor and 36 reacted, which, we understand, is 80 per cent. of the whole number. With such a state of matters it is not unlikely that some that passed as all right are the worst of the lot. It is only too well settled that a cow far gone in tuberculosis does not react, and when that is the case she becomes the most dangerous animal to have on any farm. The reacting animals at Windsor were at once destroyed.

The dairy business is now more strictly kept under government surveillance in Denmark than anywhere else in the world. Their government uses every precaution to see that nothing but pure dairy butter is exported, and a law has just come into force prohibiting the use of chemical preservatives. After June 1, 1899, no separator milk will be allowed to go out of the factories till it has been heated to 158° Fahrenheit. Borax, salicylic acid and formaline, the bases of these preservatives, are all injurious to the digestive system, and cannot be too severely reprobated when used in milk or butter.

Dairying in Minnesota.

The State of Minnesota had from its position the chance of being settled, especially along its southern line, about thirty years earlier than the Canadian Northwest, and has had an experience well worthy of study by ourselves. Its main product for the first period of its history was grain—wheat for export and the manufacture of flour, the great mills of Minneapolis always leading. Continuous grain growing rapidly run out the lighter lands, and home dairying, combined with the supply of milk for the great twin cities, was gradually introduced. Clover and blue grass were also introduced and spread everywhere quite spontaneously. Corn also began to be more freely grown. Along with these changes came the establishment of the state agricultural school at St. Anthony Park, with its staff of able teachers and hundreds of students. Only six years ago the creamery industry of the state was in a sickly and unprosperous condition, and about all that is of any value in that industry has been organized since then. The ably conducted and well attended dairy department of the State farm school has done much by its teaching and example to forward the movement and now this northwestern State sets the pace for every other State of the Union. The wheat growing area along the Red river is still only very slightly affected by the dairy movement. The southern half of the State is where the strength of the movement lies, both because of its greater natural adaptation and because the farmers felt practically shut up to dairying as the only feasible way of turning their land to account.

There are now in the State 650 creameries and over 800,000 cows, the estimate of whose annual product is over \$20,000,000 in value. About 200 of these factories have something like 800 cows each tributary to them, while 50 of them are at the bottom of the scale with about 300 tributary cows. The difference between the large and small creameries is mainly due to the fact that in closely settled districts, where every needful attention is paid to all the details of food production, skilled management and breeding, the cost of operating is cut down to a minimum; while the smaller ones are kept small and poor by the lack of such advantages. As was noted in a late issue of *The Farmer*, fully half the cows in Minnesota are now tributary to the factories, and, considering the rapid expansion of the industry within the last ten years, a still further development may be looked for. No one either in or out of the State could have dreamed ten years ago that such a thing was possible, and it is worth while for us here in Manitoba to follow out the particulars that help to explain it.

This has been done by D. B. White at a dairy convention held in December, '98, at Albert Lea. One special advantage which the southern division of Minnesota has over every other place perhaps in the world is the bran and by-products from the great mills of Minneapolis, but all the rest is possible to other districts that will take sufficient pains. The average cost of manufacturing the butter in Freeborn Co., where the work has attained the highest perfection in organization, is now down to from 1.41c. to 1.88c. But in some of the very best managed creameries the cost has been cut down to 1.28c., and that without any attempt to cut the salaries of the employees. The education supplied by the State school is another factor, and the farmers have in all possible ways been kept in close touch with the teaching and example set by that school, as well as by the institute system under Mr. Gregg, himself a keen student of advanced dairy thought. The railroads also have done

all they could to encourage the work and carry dairy produce at very low rates.

The farmers themselves are now so much interested that it takes no spurring from government agents to lead them on. The bran leaves rich manure, which, in turn, produces abundance of dairy feed, and the land is gradually rising in value.

Professor Haecker claims that the dairy cows on the State farm under his management have made a pound of butter for a food outlay of 4.7c. per pound. His average for the last two years he puts at 5½c., and he puts the case for dairying thus:—

	Cents.
Cost of butter production	5.5
Cost of manufacture	2
Cost of transportation to seaboard.....	1.25
Commission	1

9.75

Men whose expenses and salaries are paid by the government are liable to leave out a good few contingencies when figuring out such estimates. But the hundreds of thousands of cows now bred, fed and milked by intelligent and prosperous farmers all through Southern Minnesota would not be kept there merely because well paid professors are skilful in figuring up their production at a minimum of cost and a maximum of profit. They are kept because they are found profitable by no end of practical farmers, who were driven by necessity to try dairying and have stayed with it of their own free choice. Some day Manitoba may be led or driven to try the same course.

The man who wears the same suit of clothes in the stable that he afterwards wears in the butter room, cannot expect to get milk, cream and butter of the best flavor.

A rough tempered man pays for his roughness every time he exhibits it in his dairy stable. He can abuse his animals to his heart's content and get no verbal reply, but the cow will take it out of him in the milk pail and that will strike him in the tenderest point—the pocketbook. If it is absolutely necessary to "cuss a few" let him go in the wood lot, there will be just as much comfort and not so much expense connected with it. — *Hoard's Dairyman*.

At a meeting of the shareholders of the Ninga creamery, held the first week of January, the following officers were elected for next year: President, S. M. McKinley; vice-president, Wm. Shannon; secretary-treasurer, G. T. Robinson; directors, Wm. Maloney, Jos. Hicks, Wm. Shannon, Geo. Towns, Geo. Durstan, S. M. McKinley and G. T. Robinson.

Major Alvord, chief of the Dairy Division of the U. S. Department of Agriculture, intends making a very instructive exhibit at the coming National Dairymen's meeting at Sioux Falls, Minn. It will be an exhibit that will be closely examined, for it consists of samples of foreign butter, bought on the English markets, as follows: One cask each of Danish, Swedish, Finnish and Russian; one keg of Dutch; one box each of Australian, New Zealand, Argentine, Canadian, Irish creamery and Irish factory; one firkin each of Cork Firsts, Cork Superfine and Limerick; one basket of French salt butter; one box of Normandy fresh rolls; samples of butter: Brittany, Italy and New South Wales. For comparison there will be two and possibly four 56-pound cubical boxes of extra American creamery from Wisconsin and Minnesota which was exported to Manchester the present month and will come back with these foreign butters. A full description or explanation will accompany each exhibit.

A New Scheme for Creameries.

The French co-operative dairies are now adding a new department to their work that might be considered by the creameries in Manitoba and the Territories. This is an "egg department," and the following is a brief outline of the plan. The patrons send eggs to the creamery at their own expense and the creamery undertakes to sell them and secure the best market price. To secure the eggs in the best possible condition, the patrons bind themselves to gather the eggs daily and to use only porcelain nest eggs. Each patron undertakes to send not less than 200 eggs a week on two fixed days according to shipping arrangements. If old or spoiled eggs are sent, the farmer sending them is fined an amount equal to twice the value of the eggs sent in, and on a second infraction of this rule his name is struck off the list. When the patrons have become accustomed to this line of work, poultry will be added, and other things as they develop.

The market to-day calls for a large quantity of uniform product. A farmer trading out a few dozen eggs at the country store can never hope to get as high a price as can be obtained for the same eggs when sold by the crate. We can see nothing to hinder the patrons of a creamery sending in to the creamery by the cream gatherer what eggs they have to dispose of on certain days each week. All the eggs so gathered can be crated and shipped to the wholesale houses, and all middlemen's profits saved. Being marketed when fresh, the best possible price will be obtained for them. Careful dealing would soon develop a good trade, because if the quality of the eggs can be relied on there will soon be a sharp demand for them. On many farms the eggs are all used in the house, but we feel sure that if there was a cash demand for them once or twice a week at the door, as it were, there would soon be plenty of eggs for sale. It is worth some of our creameries thinking about.

This is the time of year when many farmers lose money on their dairy herd. The other day we visited the stable of a man where about 25 cows were being wintered—"being wintered," we said. That is all that could be said of the performance. Next spring the owner will wonder why his cows do not give lots of good rich milk when they are turned out on the grass. At the present time he is bankrupting all their resources in a struggle for an existence through the cold storage and starvation process to which he is subjecting them. If we would have cows use us well next summer, we must use them well this winter. If we do not, they will get back at us in good shape.

Many farmers object to having their animals tested with tuberculin. If the plan started by Lord Vernon, in the Sudbury district in England, was followed generally, it would give the greatest kind of encouragement to having animals tested and consequently to the eradication of tuberculosis. He offers a penny a gallon more for milk from cows that have been tested with tuberculin and have not reacted. This is the right method. It is always much better to lead than to drive and people can generally be coaxed into doing a thing far easier than they can be driven. There is another aspect to compulsory testing in any district. It comes rather heavy on a man who may have a lot of animals that respond to the test. It is not always his fault that the animals are infected, neither is it just right that he should be punished for neglect in the past, frequently not his own, and have to suffer for the benefit of generations yet unborn.

Creaming Milk from Cows Calved more than Six Months.

The milk from cows which have been milking more than six months does not yield its cream so readily as the milk from cows more recently calved. During the cold weather of autumn and winter by the setting of milk (in deep-setting pails, in cold water, at a temperature of 28° to 40° Fahr., for twenty-two hours) from cows which had been milking for periods of from six to twelve months, about 33 per cent. of the total quantity of butter fat in the milk was left in the skim-milk. When the milk of the cows, which had been milking for periods of less than six months each, was set as stated above, from 7 to 15 per cent. of the total quantity of butter fat in the milk was left in the skim-milk. Where the milk of one fresh-calved cow was added to the milk of eight cows which had been milking for periods exceeding six and a half months each, and the milk was set as stated above, about 14 per cent. of the total quantity of butter fat in the milk was left in the skim-milk. During the autumn and winter, when the milk from cows which had been milking for periods of more than six months each, was set in shallow pans for twenty-two hours, from 5 to 15 per cent. of the total quantity of butter fat in the milk was left in the skim-milk. By the use of the centrifugal cream separator all the butter fat in the milk, except about 3 per cent. of the total quantity, may be recovered into the cream from the milk of cows at all stages of lactation and during all seasons of the year. — Professor Robertson.

Be sure and keep the calves growing steadily and continuously.

Good cows are never found in the neighborhood where the practice of using any kind of little scrub bull as a sire is followed.

Dairying need not imply abandoning wheat, but more wheat on less acres. Both bread and butter should be produced on the farm.

The development of nervous force in the calf should be kept constantly in mind. Encourage it by allowing the calf plenty of exercise and good growing food.

Look out for the cow which gradually declines in her yield while her mates under the same management do not. You have no use for her in your dairy. Pedigree counts for nothing when the milk yield will not respond to good food.

It is a grave mistake to keep all the grain or best feed for the latter part of the winter. To be sure we need it badly then, but if stock are well fed and well started into winter, they will not need the extra spring feeding nearly so badly as they otherwise would. It is much easier to keep stock up in condition than it is to get them up when once run down.

Canada is becoming a more and more formidable competitor in the English butter market. We have recently seen some Canadian butters which for primeness, flavor and quality, would be hard to beat, and these butters are being vended at a price that commands a ready market. For this development of their export trade in butter the Canadian farmers may thank their enlightened government. How long will it be, we wonder, before Ireland has a Department of Agriculture to do for her what Mr. Fisher and his associates are doing for Canada?—The Irish Homestead.

Kildonan Institute.

The institute meeting at Kildonan school house held on the evening of Jan. 16th, was a good one. The ladies of the neighborhood provided refreshments and a social half hour put everyone in the best of humor. It made a pleasant way of opening up the winter's meetings, brought out a large attendance, and the secretary secured thirty members to start with. S. A. Bedford, Supt. of the Experimental Farm, Brandon, spoke on the lessons learned at the farm during the past season, touching on the yields and methods of cultivation of nearly all the crops grown upon the farm, and explained particularly how he raised such large crops of potatoes, being of special interest to the farmers around Winnipeg who grow a large acreage of potatoes.

George Harcourt, of The Nor'-West Farmer, spoke on institute methods found successful in Ontario, pointing out that the success of an institute depended very largely upon the secretary. As the secretary so the institute. If the secretary is a hustler, a live man, the institute will be a live one and doing good work. He also spoke on preserving moisture in the soil. The Kildonan institute will hold monthly meetings until spring.

The Central Farmers' Institute.

The report of the Central Farmers' Institute, which met at Brandon in the be-

ginning of last July, has this week reached us. The best part of it appeared in our columns five months ago, and at this more leisurely period farmers would find it worth while to read it again. We regret that this report has so much of the flavor of what a Scotchman would call "Cauld keil het up again." To serve up matter in 1899 that begins in 1896 and was completed in July, 1898, is not the up-to-date business we naturally expect from a robust and all-alive public institution. It savors more of the reminiscences of senile decrepitude that go back on the time of its frisky and headstrong youth, when throwing off the swaddling bands of legislative enactments and limitations, it kicked over the traces with all the gaiety of a half-broken bronco. The Central has done excellent work in its time and may do yet, but this laggard publication is, we regret to say, much too stale to excite enthusiasm in so good a cause as the Central seeks to represent.

The annual meeting of the Central Saskatchewan Agricultural Society was held on Wednesday, Jan. 11. The following officers and directors were elected:—President, T. Copeland; 1st vice-president, Hon. W. A. Ha'Court; 2nd vice-president, D. Lasher; directors, Messrs. Jos. Caswell, D. Caswell, John Mawson, R. Wilson, W. R. Tucker, J. D. Powe, J. W. Clark, E. S. Andrews, C. T. Falkner, Ed. Woodcock and I. Cherry; auditor, A. E. St. Laurent; sec'y.-treasurer, Clinton T. Falkner.

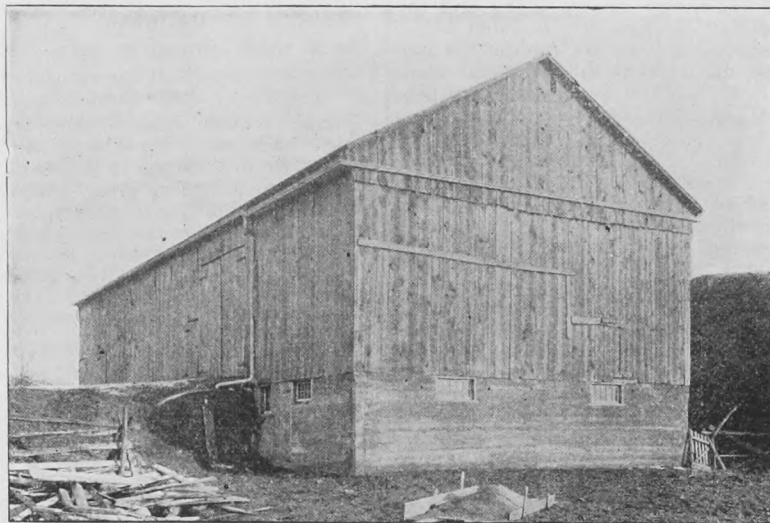
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58 YEARS IN USE.



BARN OF GEO. AXFORD, TALBOTVILLE, ONT.

Size of Basement Walls, 34 x 88 x 9 feet. Built with Thorold Cement.

Talbotville, Elgin Co., Dec. 22nd, 1897.

During the past summer I have built a basement with your Thorold Cement under my barn, 34 x 88 x 9 feet high from bottom of foundation; footing for foundation 18 in. thick; above the footing 12 in. thick. I used six parts of gravel to one of cement. I also built a cistern under the approach to the barn 8 x 18 x 7 feet high; wall around cistern 16 inches thick; arched over the top 10 inches thick.

I also put a floor into my cow stable, 32 x 57, 4 inches thick, in which I used 27 barrels of Thorold Cement. I used six parts gravel to one of cement. The floor is as hard as a stone. I consider both wall and floor better than I could have made of any other material, and much cheaper.

Yours truly,

GEO. AXFORD.

FOR FREE PAMPHLET, WITH FULL PARTICULARS, ADDRESS

ESTATE OF JOHN BATTLE, THOROLD, ONT.

Agents Wanted in Unrepresented Districts.

Market Review.

Winnipeg, Jan. 19th, 1899.

The healthy condition of Canadian trade as noted in our last review has been in no way affected by the slack season that occurs during the opening weeks of the new year. So far as the wholesale houses in the west are concerned, business has been exceedingly good and orders are dropping in now that indicate a good business later on. During the past year Winnipeg has made rapid growth, both in population and in the erection of handsome and substantial business blocks and residences. Although the erections of 1898 exceeded the combined buildings of a number of previous years, this year promises to eclipse the big efforts of last year; for at this early date there is more building in sight than was erected last year. This gives one some idea of the enormous trade that is being done in the west, and thus of the development of the country. The large increase in the population of Winnipeg foreshadows the day when there will be a very large population in this city demanding the products of Manitoba farmers.

Wheat.

Elevator owners complain, and with good reason, of the heavy expense of keeping their doors open with next to nothing doing. The last week's inspection of Winnipeg district is a pretty good index of the quantity and quality of the output at local points. Only a half of the week's inspection was found good. In our last report it was indicated that Fort William inspection was necessarily more exacting now than earlier in the season, when the grain was going out as freely as it came in. But a good judge assures us that Fort William is to his mind fully as indulgent as it is safe for it to go. There can be no doubt that buyers whose men are short of experience with damp wheat have lost grade owing to the presence of damp bags among the loads they bought. Chicago quotes 70½c., and the rate for Fort William stands about 68c.

Inspections for last six months, Winnipeg district, were as follows:—

	Cars.	Bushels.
Extra Manitoba hard	8	6,000
No. 1 hard	2,012	1,509,000
No. 2 hard	523	392,250
No. 1 northern	1,736	1,302,000
No. 1 white Fyfe	6	4,500
No. 2 northern	182	136,500
No. 1 spring	259	194,250
No. 3 hard	28	21,000
No. 2 white Fyfe	5	3,750
No. 3 northern	3	2,250
Rejected (1)	148	110,000
Rejected (2)	70	52,500
No. 1 frosted	2	1,500
No. 2 frosted	4	3,000
No grade	704	528,000

Totals 5,695 4,271,250

The inspection for week ending Jan. 12 was: No. 1 hard, 58 cars; No. 2 hard, 9; No. 3 hard, 2; No. 1 northern, 42; No. 2 and 3 northern, 5; No. 1 spring, 1; No. 2 frosted, 1; No. 1 and 2 rejected, 9; no grade, 90.

From this it appears that only one car in 60 went very low grade in the six months reported on. Last week one car in two went low grade, and if our information is correct, more of the same grade ought to be sent out without delay. A well-known wheat buyer urges on The Farmer the importance of keeping before its readers the danger of holding raw wheat too late in spring. It is quite safe as long as it keeps frozen, but as soon as it begins to thaw out the mischief begins. In 1891 much raw wheat was held over in elevators that afterwards heated and caused very serious loss. It aroused very little suspicion when being bought in dur-

ing the winter, but as the season began to warm up the holders of that wheat found it unsaleable for milling, and even very poor value as feed. If shipped out in time and put through the dryer, such wheat will bring fair value.

Oats

One of the leading men of the Grain Exchange drew our attention the other day to the very inferior quality of most of the oats grown in Southern Manitoba. The same thing has been noted in previous seasons. There are two causes for this inferiority. Any kind of seed is reckoned good enough to raise horse feed and the soil is often much less suitable for oats than in the northwest part of the province, where as a rule our best oats have always been grown. Rapid City was last year a strong point for oats and the best quality has come from Minnedosa west this year. Well-dressed seed from the northwest would do very much to improve the crop along the south, but a pretty safe judge says he is far from certain that home-grown oats will this year be quite safe as seed. It is therefore very pleasing to note the offer made by W. W. Ogilvie to bring in carloads of seed oats from Ontario to be distributed at cost from his numerous elevators here. The freight rates are high, but it is probable the C. P. R. will give a very low rate for this seed so as to improve the quality of the oats produced here.

We note no change in Winnipeg prices, but buyers express surprise at the moderate quantity offering, in view of the 17,000,000 bushels of reported yield.

Barley.

Slow demand. Feed sorts, 24c.; malt-ing, 26c.

Millfeed

Stands at the old figures, bran, \$1; shorts, \$12.

Chop.

From \$8 to \$18, as to quality.

Oatmeal.

Is a shade firmer in price; \$1.85 to \$1.90.

Horses.

Trade is quiet, though sales are being made. Last week there were 80 horses shipped from Montreal to England, where heavy draught horses bring from \$125 to \$200. None but good ones are wanted. No changes in prices here. Ryan & Fares are selling the work horses used in the construction of the Crow's Nest Pass railway.

Cattle.

The local market is a trifle better than when reported some two weeks ago. The large stock laid in at Christmas has been worked off pretty well and butchers are looking for supplies. Owing to the enormous sale of stockers from all parts of the province and the small number of cattle put up to feed it will not be surprising if butchers' cattle suitable for the local market are in good demand before spring. The supply is being met at present by range cattle, but these cannot be counted upon till spring.

Choice car lots, weighed off the cars, bring 3½c., and it is reported that some extra choice ones have been sold for higher figures. Common cattle bring from 2½c. to 3c., according to quality. A few stockers were moved last week at about 2½c.

Milch cows continue in good demand at from \$25 to \$40.

Sheep and Hogs.

None are offering and prices are nominal at 3½c.

A few Manitoba hogs are coming in and bring 4½c., weighed off the cars for choice hogs. Supplies are being brought

in from the U. S. and Ontario. Hogs are a little easier in the east, and considerable supplies are coming west. Dressed hogs bring from 5½c. to 6c., according to quality.

Cheese.

There is practically nothing doing in cheese, though there is a much stronger feeling in the market east. The improvement noted in last market review has continued. The stocks of cheese on hand in the east show a decrease of 195,004 boxes as compared with Jan. 1, 1898. Values are rising and indicate good prices for 1899. Local jobbers quote cheese at 9½c. to 10c.

Creamery Butter.

The market is steady, but prices are merely nominal. The Brandon creamery has sold a little fresh make. Prices run from 22c. to 23c. In the east winter creamery of choice make is going for 20½c. to 20¾c. for the English market. The total shipments of butter from May 1 to Dec. 30, 1898, from Montreal show an increase of 79,582 boxes, while the American exports show a decrease of 105,241 boxes, or a decrease of 25,659 boxes from this side of the Atlantic, when both countries are considered.

Dairy Butter.

Dairy butter is very quiet. Dealers tell us that there is rather more of it coming in this winter than usual. This is no doubt owing to wheat being held; money has to be made some way, and the cows are being better fed to supply the ready money. Choice pound prints, neatly done up in parchment paper, will bring as high as 16c. But the ordinary mixed rolls of all sizes, shapes, colors and flavors go slow. We would strongly advise putting up fresh butter in prints and neatly wrapping them in parchment paper. If this cannot be done, secure small tubs and pack in them. If the butter in a tub is all one color it will bring a higher price than when in rolls, and handles much better. The price runs from 13½c. to 14½c., according to quality and quantity.

Eggs.

Some Manitoba eggs are coming in, and bring from 22c. to 23c., but they are not all fresh, some of them being stored stock mixed in with fresh stock. This is bad policy. Strictly fresh eggs bring from 40c. to 50c. a dozen. There is a good demand in the city for them, and we would think that at such prices more would go in for raising poultry for the production of winter eggs. Eggs from Ontario are worth 20c., and limed stock are worth 16c. to 17c.

Poultry.

Poultry trade is always dull for a few weeks after Christmas. The time to sell poultry is before Christmas: all stocks are bought up quicker than in anticipation of the Xmas markets, and the supplies are generally so large that there is a dull market for some time after the holiday season is past. Farmers should not forget this when marketing poultry. It will be a month before the poultry market begins to assume anything like activity. Of course, small sales are being made, but the market is easier, with practically unchanged prices. Chickens are worth 8c. to 9c.; Ontario turkeys, 12c.; Manitoba, 10c. to 12c.; geese, 9c. to 10c.; ducks, 8c. to 10c.

Potatoes.

Quiet at 35c. to 40c. per bushel.

Hides

Market quiet. Inspected hides: No. 1, 6½c.; No. 2, 5½c.; No. 3, 4½c. Frozen hides bring a flat rate of 6c., with a dockage of 5 lbs. Branded hides usually grade No. 2, and bull hides No. 3. Calfskins are worth 8c., and kip, 6c. to 6½c. Sheepskins and lambskins, 50c. to 65c. each. Horse hides, 75c. to \$1.50 each.



New Arrivals.

The Galician Immigrants.

Galicia is the most northern province of the many-tongued Austro-Hungarian Empire, bounded on the south, and divided from Hungary, by the Carpathian Mountains, and on the north by the irregular frontiers of Silesia and Russia. The western extremity of the province, namely, from Cracow to about east longitude 23—a portion of unhappy Poland, which fell to Austria at the Partition—is mainly peopled by Poles. At the south-eastern extremity is the small Province of Bukovina, both provinces forming a part of what is known in Northern Europe as Little Russia. There are many Poles, Germans, and Jews scattered throughout Galicia, some of whom have emigrated to Canada, but the people referred to in ordinary conversation here as "Galicians" and in Austria itself as Ruthenians through the government's aversion to calling them Russians, are in reality Slavic Russians, and speak the Russian language, or a dialect of it, called Low Russian, in common use on the borders of both countries. Many generations ago they belonged to the Orthodox Greek Church, but, breaking away from it, formed a communion of their own, under the aegis of Rome, and which they call the Greek Catholic Church, but as their service is held in the secular tongue, and the clergy are allowed to marry, the authority of the Roman Pontiff seems to be little more than nominal.

The Little Russians of Bukovina, on the other hand, have clung to their orthodox forms, and are still in full communion

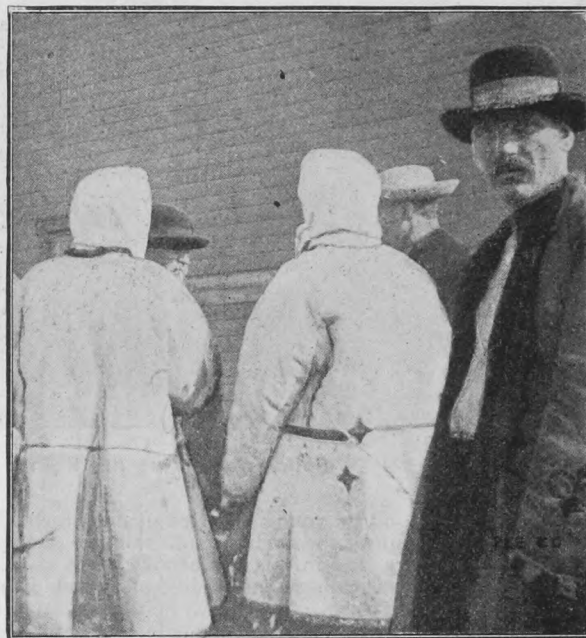
with the Greek Church. In Galicia proper, aside from the Polish section of that province, there are about 3,000,000 Little Russians, and in Bukovina about 600,000. The people all live in villages, whose population varies from 2,000 to 8,000 souls. Their social life is of a very practical character, even courtship and marriage having a cautious and prudent turn, begot, no doubt, of the narrowness of the people's circumstances. The suitor asks the consent of his fiancée's parents, visiting them and her in company with his own or a few elderly people of the village to discuss the important problem of dowry, which is generally settled by the son getting a share of his father's small patrimony, and the girl a like share from her own parents, each remaining sole owner of their respective portions.

The marriage ceremony is then performed by a regularly ordained priest, and not secularly, as is often the case in Hungary. Baptism is also a religious ceremony, but in exceptional cases, such as illness, etc., the infant may be, and often is, baptized by the midwife. Burial, too, is after the ordinances of the church, and is sometimes preceded by something like an Irish wake; that is to say, the friends of the deceased visit the family and sit up around the corpse for a couple of nights, whilst the young people of both sexes indulge in a sort of game in the adjoining room. The people are not devoid of musical talent, and many play the violin, which is their favorite instrument, with taste and skill. But the passion for sports is unknown in Galicia among the common people. There is no football or cricket, no skating, snowshoeing or hockey, as with us. In the evening mothers and daughters knit and spin, whilst the men play cards, tell stories, and frequently wind up the evening with an impromptu dance. In a word, though gregarious, the roots of their affections are around their ovens; a simple people, homely, and uncouth only in their national garb, easily elated, and easily depressed.

Each village is governed by a Veet, whose functions resemble those of our mayors, and by a number of councillors, in proportion to the population of the village, and the whole body, known as the Radnay, holds office for six years, the

council being elected by the heads of families, and the Veet by the council. These bodies seem to possess all the powers necessary to the good government of the village community, and have proprietary rights over game on their lands, the shootings being annually sold at public auction, though the authority to carry weapons must be obtained from the general government.

The public domain is almost entirely confined to mountain lands, the great body of the province being divided between the nobles and the village families, whose farms, minutely sub-divided for generations, now run from two to ten acres only in extent. At every village there is a resident noble, whose land exceeds in area that of all the villagers combined, and



The Galician Garb.

whose boundaries frequently cut them off from their own small holdings, so that to reach them the villagers have to travel, in many cases, four or five miles.

The encouragement given by the nobles to the Jews, who remorselessly exploit the Little Russians generation after generation, and the continued sub-division of their lands, have at last made it impossible, even by the most untiring labor and pinching economy, to make a living, and hence the strong desire now exhibited by the surplusage of the people to ameliorate their lot in other lands.

About the year 1892, agents visited Galicia from Brazil, and by liberal promises and exaggerated statements induced no less than 15,000 of them to emigrate. After some experience, however, they realized not only that the climate of Brazil was unsuited to them, but that their condition in other respects was anything but satisfactory, and a strong note of warning was, in consequence, addressed to their friends at home against any further emigration to that country.

In the meantime, a number of Little Russians had made their way to Western Canada and returned with a favorable report. Dr. Oleskow, also a notable teacher in the Galician province, visited the Northwest in 1895, and after examining the whole country returned with a similarly good report, and, upon the dissemination of these favorable opinions, the movement began at once. It took shape as follows: The intending emigrant, say, with five acres, scattered here and there amongst the acres of others, would offer, and generally sell, his holdings to the adjoining land-owners, who, with some



Galician Bringing in Hay.

money to spare, were naturally anxious to increase their own small acres. These sales, though in a manner forced, were not sacrificed in the ordinary sense, since the purchaser, eager to augment his narrow fields, and sympathizing with his fellow man's necessities, paid good prices for what he bought. In general, these small holdings sold for \$300 per acre, and higher prices still were often obtained, though, owing to the increasing desire to emigrate, it is becoming more difficult now to sell at high figures. Their village houses the

logs and wattle, with sod roofs and earthen floors, are made very tight by a thorough coating of clay inside and out; and, as each is provided with a cheaply constructed Russian clay oven, in which they also bake their bread, they are generally warm and comfortable.

Their lands are all held in severalty, and, unlike their old estate in Austria, each family lives upon its own quarter section. They are emphatically mixed farmers, fond of cattle, sheep, and poultry, and great raisers of coarse grains, particularly of rye,

Avoiding Colds.

We are at the season of the year when colds are frequent. We are daily reminded of this by meeting the children with snuffles, and the other people with sore throats or cold in the head. Avoiding colds is an art which should be acquired by every individual, as it usually requires only proper precautions. Colds are often the result of some condition of the constitution, or manner of living, or a lack of mental hygiene. In the latter case, people frequently encourage colds by expecting and looking for them every time there is a change of atmospheric influence, such as often occurs daily.

Good mental resolutions, and absence of undue fear of colds, will do something towards avoiding them; but mostly the art is secured through increasing the resistance of the body. Colds are frequently caused by draughts of air striking sensitive portions of the body, usually the back of the neck, abdomen, feet, and legs, as these portions are perhaps the most susceptible. To avoid this tendency, the skin should be toughened, so that it will bear cold air better; this is done by daily cold sponge bathing better than any other way. If this habit is taken up during the warm weather, and kept up during the entire year, it will do much towards exempting individuals from colds.

People who have not acquired this resistance will have to exercise more pains to adapt their clothing and exercise to the condition of the climate. Getting heated in changeable weather renders the individual very much more susceptible to taking cold. Practical adjustment of clothing, exercise, rest, and protection, during the seasons when colds are prevalent, will often be a temporary measure against taking cold, while, on the other hand, constant worry about one's inability to adjust these conditions may be a cause for its development.

Water alone has been known to sustain life for fifty-five days.



Galician Building his Home.

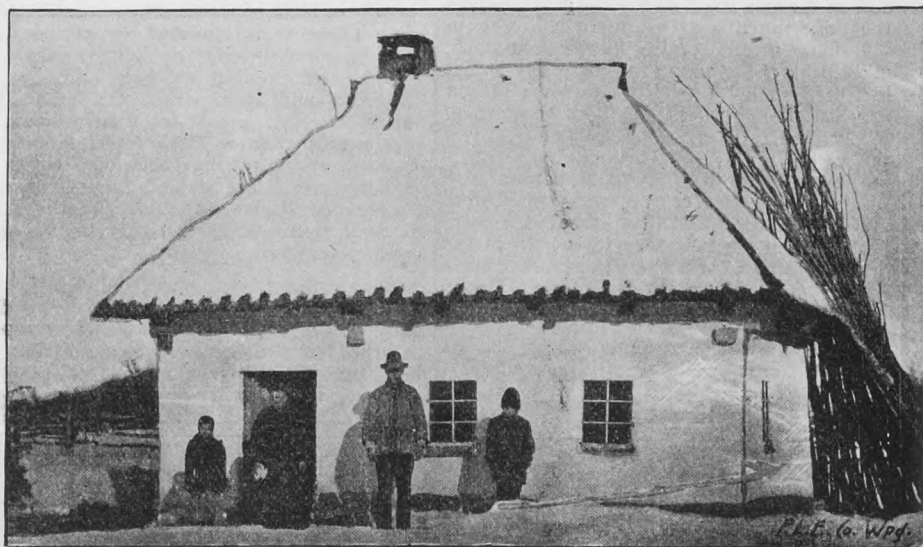
emigrants disposed of to young married people, or others desiring to purchase, and remain in the country, and in this manner their belongings were, without much difficulty, converted into cash.

We have seen that the first incoming of Little Russians was in 1892, and ever since a thin stream has continued to flow, until 1896, after which its volume swelled to large proportions, amounting to nearly 5,000 souls yearly. There are now over 10,000 Little Russians settled in Manitoba, Assiniboia, Alberta and Saskatchewan. The province has received as many families as the territories put together, the largest settlements being at Stuartburn, Dauphin and Pleasant Home, with smaller communities at Gonor, Brokenhead and St. Norbert—in all 1,120 families. In Assiniboia the three Yorkton colonies number 400 families, and at Grenfell there is a small colony of 50 families, whilst in Alberta the Edna colony, 40 miles from Fort Saskatchewan, numbers 500 families, or about 2,500 souls.

The eleemosynary method of distribution and settlement, where help was given at all, was as follows: Having first appointed three or four delegates, who, accompanied by a Canadian official, inspected the country, and selected their locations, the immigrants were then forwarded at once to their reserves, occupying a good shelter furnished by the government until each head of the family had erected a house of his own. Provisions were given to the poorest, cows to families with small children, and work found for the needy by an official, who also kept an eye upon the family when its head was at work on the railway grade, or at any other employment which kept him from home. It must be borne in mind, however, that the Galicians must make good these charges in the same way that the Menonites did, and as the average outlay per family is not large, it is no very formidable task for an industrious people to recoup the government's expenditure.

Their houses, though built of rough

from which they make their bread. A minute and painstaking industry is, in fact, the chief characteristic of these people which is already, in a marked degree, bearing fruit in the older settlements in improved dwellings, outbuildings and farms. Accustomed in their own land to spade industry, the women work diligently in the fields at home whilst the hus-



The Home Completed.

band is earning wages abroad. It is enough to examine their good fences, buildings, and clean land at Gonor on the Red river, where even the worst weeds have been eradicated by persistent hand-pulling and burning on the part of women and children, to forecast their ultimate success and value to the country.

Live on what you can earn and don't buy what you can't pay for.

"Are you a native of this village?" asked a traveller of a resident of a sleepy little southern hamlet. "Am I a what?" "Are you a native of this village?" "Hey?" "I asked you if you were a native of this village?" At that moment his wife, tall, gaunt, and sallow, appeared at the open door of the cottage, and said, acridly, "Ain't ye got no sense, Jim? He means wuz ye livin' here when you wuz born, or wuz ye born before ye begun livin' here. Now answer the gentleman."



Prize Competition for Our Lady Readers.

The Nor'-West Farmer will offer monthly, for the present, a leatherette work-box, with handsome picture in colors on lid, and stationary mirror on inside, silkline lining, containing five pieces handy for sewing, to the competitor who sends us by the 20th of each month the most instructive letter on any topic suitable for our "Household" readers. Competitors must be females, and on the top left-hand corner of the envelope containing the letters must be written the word "Household." The prize will not be awarded to the same person twice, and all manuscript sent in to be the publisher's property, whether awarded a prize or not. Address, The Nor'-West Farmer, Box 1310, Winnipeg, Man.

The Proper Way to Breathe.

By Prairie Housekeeper, Baldur, Man.

It is strange to find, in this enlightened age, when people seem to know everything that is worth knowing, that so few people understand how to draw their breath properly. My attention has been drawn to this fact in a very forcible manner within the last year or two, and after taking particular notice of those who come within my sphere of observation, I am compelled to say that there is only about one person out of every twelve who breathes through the nose.

A certain physician (whose name I cannot recall at present) has written a pamphlet with the very suggestive title of "Keep Your Mouth Shut." I have not read the book myself, but I would like to recommend it to others, as I understand that it treats of the dangers incurred by breathing through the mouth. In a cold climate like this the danger is especially great, for the cold air is taken directly to the lungs, whereas, if the breath is drawn through the nose, it becomes heated before reaching those delicate organs.

I think that improper breathing comes not from want of thought, but from want of knowledge. I have talked with a good many people on the subject, and have been told by them that they had no idea that there was any harm in breathing through the mouth. This convinces me that children should be taught from their earliest infancy to breathe properly, and it should be the duty of school teachers to impress upon the minds of their pupils the evils of incorrect habits of breathing. I do not think that the subject is touched upon in the books of physiology used in our schools. It ought to be amongst the first lessons in the junior physiology.

Nearly all pulmonary diseases are aggravated, if not caused, by breathing through the mouth, and a troublesome cough can be lessened in a remarkable degree by breathing only through the nose. Only those who are fortunate enough to receive lessons on voice culture are really taught the art of breathing.

Only about two minutes are required for the blood to course through the heart, thence to the lungs, back to the heart, and then through the entire body and return to the heart.

A Temperance Sermon for Girls.

By O. E. H., Ninga, Man.

Thinking over a subject for the Household Column, I decided upon Temperance, this being a topic which I contend cannot be too often, or too forcibly, brought before the public. I wish particularly to say a few words to our girls—the young ladies who are to become the wives and mothers of the future. Now, my dear girls, please listen while I preach a short sermon.

In the first place, are you careful enough with whom you associate? Do you take a decided stand for temperance among your young gentlemen friends? Do you stand firm for temperance, and say "The lips that touch liquor shall never touch mine?" Are you not a little too indulgent, especially if the young man be particularly handsome and bon homme? And if you should notice the tell-tale breath, he will make excuse "Just a little for a headache." Of course, he does not often indulge; can take it or leave it alone; would be horrified at the mere mention of ever becoming a common drunkard. Ah, my dear girls, beware!

Do you think for a moment those vile, besotted wretches you see on the street corner, or in the ditch, or led off by the police, were not once dear little innocent babes, cared for and tended by loving hands. With what pride a fond mother has started that son on his first journey in life; how she has thought over and planned his future to be that of a good and upright if not a great man among his fellows, and this is the outcome. Did he fall so low at once? Was it his intention to blight all her hopes and sink his own soul? Do you think so? No, no. It was the fatal first glass; the taking a little, and then a little more. He is away from home influence; no one to restrain him. The young ladies of his acquaintance, perhaps the one he cares most to please, shakes her pretty head and laughs it off. Oh, girls! How dare you pass it over lightly? How dare you marry a man you know takes his glass, and become the mother of his children with that dread appetite planted in their very systems for them to fight against to conquer or sink under?

I have sometimes gazed upon dear little children lying in their snow white cribs, with the rosy flush of sleep on their fair cheeks, and trembled for them lest that rosy glow should in after years be shadowed by that purplish hue so common to the drunkard. And, aside from this awful crime you may be committing, what assurance have you when your fond young husband kisses you good-bye in the morning that he will not return in a state, to say the least of it, unfit for your society? Think, if this should once occur. What would your feelings be ever after when he was absent a little late or stayed somewhat longer than you expected. However legitimate the cause, that harassing dread would be with you. How the comfort and joy of your home would be ruined, no matter how bright the prospects had been.

Now, my dear girls, do not elevate your pretty noses and say, "She is an old crank," but ponder these things in your heart, and do not set up homes with this dread skeleton in the closet.

Teasing Friend — "What makes that new baby at your house cry so much, Tommy?" Tommy (indignantly): "If all your teeth were out, and your hair off, and your legs so weak you couldn't stand on them, I fancy you'd feel like crying yourself!"

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Home-Made Skin Tonics.

Greasiness of the skin generally arises from lack of cleanliness or debility of the skin. Only an astringent has an effect upon it, and a very simple and entirely harmless one may be made from one pint of rosewater, half a pint of white wine vinegar and a few drops of the essence of rose. This lotion should be applied with a soft linen rag or a fine sponge.

Blackheads are difficult to get rid of once they appear. They are caused by the clogging of the pores of the skin by dust or foreign matter. Alcohol, 90 per cent., applied by means of a piece of chamois skin, will give tone to the skin and remove unsuspected dust and dirt, at the same time stimulating the small glands and removing, by constant use, the blackheads.

Tan and freckles may be removed by the following lotion: Two drachms of powdered sal ammoniac, four fluid drachms of cologne water, one quart of distilled water. As home remedies both lemon juice and borax are very efficacious for the same purpose.

For some skins which cannot stand constant washing, but needing to be cleansed after a walk or ride by other means than soap and water, lait virginal is a delicious preparation, and is made as follows: One pint of rose, orange-flower or elder-flower water, half an ounce of the simple tincture of benzoin and ten drops of the tincture of myrrh.

After exposure to a harsh or chilling wind it is well before retiring to rub a quantity of fresh cream on the face, removing after five or ten minutes, to be again applied, followed by a generous puffing of rice powder. Remove in the morning by lait virginal and tepid water.

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size 10½ x 17½, of 100 different subjects. Mailed free for 10 ROYAL
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A Christmas Bighorn.

By Lieut-Col. Andrew Haggard, D.S.O.

The scene is a little camp, in an open glade sheltered by a grove of spruces, near the borders of that far away northern lake, Winnipegosis.

The firelight, flaring up from the huge logs blazing merrily in front of two little white tents, reveals a truly Canadian scene. Two white hunters, assisted by a full-blooded saturnine Indian named Iron Claws, are suspending various joints of moose meat from the branches of neighboring trees from which it is first necessary to shake the slight covering of snow.

It is Christmas Eve.

At last my comrade breaks the silence. Rising on his elbow and tapping out the ashes of his pipe against an axe lying handy, he says:

"This woodland and prairie hunting is awfully jolly work, old fellow, especially when the camp is full of meat as it is to-night, but I should like, just for a change, to have some of that Rocky Mountain hunting for Bighorn sheep that I have heard of. Say! were you ever lucky enough to kill a Bighorn?"

"Indeed I was, my boy, and a beauty he was, too," I reply, proudly; "his head is now one of my dearest possessions."

"Oh, have you really," cries my young companion excitedly. "Come, tell me all about it. It will serve to pass the time while Baptiste is cooking the dinner. Isn't it awfully dangerous work that sheep hunting, and where did you get him? I should like to hear all about it."

Thus encouraged, I in turn knocked out the ashes of my pipe, and, taking a seat upon our provision box near the fire, commenced my yarn.

"Some few years ago, accompanied by my friend, Billy Moore, I went down into the country south of the Okanagan Lake, in British Columbia, to hunt mule deer, or black tail deer, as some call them, on

the slopes of the Gold Range, which is an offshoot of the Rockies.

"It was in the full winter season, being the middle of December, but the lake, which is ninety miles long, stretching due north and south, was not yet frozen up, and we managed to get down to the south end at Pentiction all right by water, instead of following the very dangerous trail along the mountains that sloped abruptly down into the lake. My wife, who was fond of backwoods work, had accompanied us, but we intended to leave her in a little wooden shanty rejoicing in the grand name of the Pentiction Hotel, which said shanty formed the whole of the City of Pentiction in those days, and for all I know may do so still. It served as a stopping place to miners going through by the stage to some mines in the mountains of Fair View, a day's journey south, and very near the Yankee border. There were various ranches, and an Indian village or so dotted about here and there in the park-like country, enclosed by two ranges of mountains, to the south of the lake, lying on both sides of the river Okanagan, and of another lake called Dog Lake, a few miles further south. We soon found that the whole of this country was full of deer, for in the light snow lying on the lower slopes of the mountains, even quite close to the Pentiction Hotel itself, their foot tracks were everywhere. As there were plenty of trees on the slopes of the rocks and ravines, stalking seemed easy. We were also met by the welcome news that there were 'sheep' in the neighborhood, although it was said that they were very shy and only kept to the higher and more dangerous crags and peaks. Nevertheless, if they were there, why should not one get them? we argued. As the weather was bitterly cold, with the thermometer often below zero, while a piercing cold wind was always blowing along the valley between the two lakes, we soon gave up the idea of camping out, for indeed it was not necessary. Procuring some rough Indian horses, and two well-

known half breed guides and hunters, named Shuttleworth, whose uncle is an English baronet, bye the bye, we were soon enjoying most excellent sport.

"Billy would ride off as far as possible up into the mountains, with Harry Shuttleworth, in one direction, and I would go with George Shuttleworth in another, and thus we used daily to stalk and shoot several deer, getting some splendid heads. We used to tie the horses up to a tree, when we had got them up the mountains as high as we could go, and leave the poor brutes there all day while we went stalking up the ravines and gulches. Although when we came back we would find long icicles hanging from their nostrils and the corners of their eyes; their long, thick hair protected them from the cold, and they were never any the worse, but for that matter my own beard was often one big icicle also. There were wild horses, too, in the mountains, whose tracks I have seen in the snow on the very highest peaks, for they can apparently climb like goats. I had several opportunities of stalking and shooting them, which my guide wanted me to do, as the ranchers hate them for various reasons. I could not, however, ever find it in me to pull the trigger and shoot a horse, although I occasionally stalked them for the sake of observation and got within easy range.

"After several days of this successful deer stalking, my wife remarked to me one evening, as it was getting near Christmas, when Billy and I had both, so I remember, come home with some fine heads.

"Why don't you go and get me a Bighorn sheep, old fellow, just by way of a Christmas present? I think we should like a little mutton for a change from all this venison." In reality it was not the mutton she wanted, but she was ambitious, you see, on my behalf.

"Bill and I here looked at each other out of the corners of our eyes. We had not only already seen sheep tracks in the frozen snow, but we had both also seen

little groups of three or four sheep each, but failed to get near enough to shoot them. He had, in their unavailing pursuit, already nearly been killed twice, having slipped down two ice slopes to the very edge of precipices, while I had myself been nearly killed once in a similar way while trying to get a shot, by slipping on an ice-covered crag hanging about a thousand feet above a ravine. I had on that occasion cut my breeches through, and, even as I speak to you I can feel the old pain in my kneecaps where I fell. But I had not gone quite over the cliff, as you see, my boy, or I should not have been yarning away to you now. However, I gave my rifle a horrid dint in the stock.

"But to return to our muttons. After this remark I determined, as you can imagine, to get a sheep or die in the attempt, and this notwithstanding that, having in the meantime been told by an old rancher that 'sheep hunting was very dangerous,' my wife begged me next morning to stick to the deer after all, and to leave the said muttons alone.

"The next day I saw an interesting sight in the shape of four Bighorn sheep, a ram and three ewes, being chased along the sides of a ravine by a coyote, or prairie wolf. I was in a very dangerous position at the time, and they were about four hundred yards away, but I managed to get off one shot from my Winchester at the ram and another at the coyote before they finally vanished from my gaze forever.

"The day following was Christmas Eve. Starting very early with George Shuttleworth, I rode a long way down the valley to the mountains on the eastern side of Dog Lake. They were far more precipitous and rocky even than those nearer home. They were also far more bare of vegetation. After a long climb we soon saw abundant traces of Bighorn, for along the higher ledges of the rocks there were regular little roads of their square-toed footprints in the frozen snow, exactly like the tracks in a farm lane at home. But never shall I forget the awful exertion of that day's climb! What, with sinking in the deep snow in crevices where it was lodged, and slipping about, for my moccasins would not keep a grip on ice-covered rocks. I was simply steaming with perspiration the whole time. And yet my old hunting clothes were worn as thin as paper and hanging in rags, and the cold was really so intense that as soon as ever I mopped my face my handkerchief froze as stiff as a board. Suddenly, and while in this distressing state of heat, my half-breed guide grasped my arm violently, whispering at the same moment, in a voice trembling with excitement, that one cabalistical word 'Sheep!'

"At the same moment he dropped to the ground, I doing the same,—in fact he dragged me down with him.

"Gradually I raised my head and peeped over the edge of a little ravine upon the top of which we had just debouched from a gorge.

"Despite the drops of perspiration, which were blinding me, I soon saw on the rock on the other face of the ravine and below me a dark brown patch looking like a brown soda water bottle with a white extremity. It was a splendid ram lying down about a hundred yards away.

"Although trembling with excitement, I took a steady enough aim for his right shoulder. I knew I aimed straight. Crack went the rifle with a reverberating roar through the mountains, and oh, horror! the sheep springs to his feet and bounds away. At the same time three more rams that had been unseen in the ravine also spring up the hillside with a clatter and bound away.

"I fired two more shots in rapid succession from my Winchester, but not one of the sheep stops. All of them have gone on!

"I look at my hunter guide aghast, and ashamed.

"'Never mind,' he cries, consolingly. 'Perhaps you've hit them all the same, so come on fast after them.' And he bounds down the ravine and up the other slope as fast as a sheep itself, I following also at break-neck speed, leaping lightly over places that would have been impossible in cold blood.

"There was no snow for a space on the rocks, but suddenly we came to a patch which was covered with a shallow sprinkling of fleecy white all clotted with spots of bright vermillion.

"'All right, here's the blood,' roared George, excitedly.

"On we go, following the ever increasing stream of blood on the snow, but now and then losing it again in places where the rocks were altogether bare.

"Suddenly, 'There he is,' I cry, as, quite out of breath, I paused to dash the perspiration from my eyes. For there, on a pinnacle, far above us, with his brown body and white rump, is my ram, standing and calmly looking at us. A hasty shot proves useless, and he is off again, we after him as before. He does not now go at all fast, that is, not fast for mountain sheep; but for a man it was far too fast among those awful crags. At least so I found it, especially having the heavy Winchester to carry. The half-breed following the trail is nearly out of sight ahead of me, when I call him back, for I am exhausted.

"'Take the rifle, and go on,' I cry, 'I will try and follow your trail wherever there is snow.' The blood had ceased, there are sheep's tracks everywhere, all mixed up. I cannot any longer pick out my ram from the rest.

"He seizes the rifle, and bounds ahead

out of sight, I following the light imprint of his moccasin-clad feet the best way I can, but I find it difficult for want of snow, and begin to fear I shall lose myself in the rocky defiles. I hear him every now and then letting off a cartridge, but I know he will hit nothing, for although a good tracker and stalker, he is, like many other half-breeds and Indians, a very poor shot. Besides I know that he is only taking impossible snap shots, and that his aim must under the circumstances be unsteady, and his hand trembling. At length he is silent. I have reached a wind swept plateau of rock, where there is no longer any vestige of a trail. There is nothing to be seen save two huge eagles circling and wheeling overhead.

"The solitude and grandeur of those awful mountains is intense, as breathless and exhausted I gaze hopelessly around me for a sign of either the man or the sheep. But alas! both are lost, and I fear I am lost myself. I am just beginning to experience that deadly sickening sensation at the heart that only those who are lost in the backwoods can feel, when I am frightened almost out of my senses by the most awful blood-curdling yell. Again it is repeated, and again! filling the whole air with its fearful shriek, and reverberating and re-echoing from crag to crag. The horrid sound seems to come from a dark and gloomy ravine beyond the edge of the plateau, the only possible descent into which is alongside a tree trunk standing on the brink of the precipice.

"Rushing to this tree, I see, by the broken soil and a little disturbed snow near the roots, that both the man and the sheep have gone down that way. I peer over and down the gloomy gorge but can see nothing, when suddenly again, louder and more terrible, arises that fearful cry.



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"Not a second longer do I hesitate. I am now convinced that it is not, as I had at first imagined, the cry of one of the hungry wolverines with which the mountains abound, but that of a man in pain. George must assuredly have broken his leg or worse. I reach the bottom of the precipice in record time, only to find a short way down the gorge—what do you think. Only my half-breed companion practising the war dance of his ancestors around the carcass of an enormous Bighorn, while letting off ear-piercing war whoop on war whoop just from sheer ebullition of feeling.

"Exhausted and delighted I fall upon that ram's body and clasp the neck for joy.

"My first shot, fired from above him, had been the only one that had struck the beautiful animal, but that had gone in at its back right through and out at its belly.

"How the animal had ever run so far was a wonder, but how we ever got the skin, the huge head with its grand curving horns, and two legs of mutton as well, up that precipice again was a greater wonder still. The rest of him was left to the eagles still whirling overhead.

"My wife met us in a pine wood by a ranche as I was nearing home, and gave a scream of delight as she saw the lovely horns suspended by a leather lariat from my saddle bow.

"For you see, my dear boy, I had brought back the mutton for the Christmas dinner after all. So that is an end of my story, and here comes Baptiste with the moose soup. Hurrah, for moose soup, say I."

"And hurrah for Bighorn shooting," added my companion. "I will certainly have a go at it some day."

There was no time to talk any more after that, and in an hour's time silence reigned in the camp that you might have almost heard the flakes of snow falling.

Keep Your Mother Young.

Girls, do you realize that the happiness, both present and future, of your mothers is largely in your keeping? Of course, you all acknowledge that no dearer relationship exists than that between a loving mother and daughter, but do all of you believe it?

A girl cannot afford to let this blessedness slip out of her life. And yet many do, and by hasty word, neglect, and even by continuous rudeness to their mothers, cast shadows where they could so easily bring sunshine.

Some mothers—wise mothers—assert themselves; but too often the wrinkled brow, the wearied step, and the permanent look of sadness, so noticeable in many mothers, come from want of appreciation in their sons and daughters. So much of her earthly happiness is banked upon her children, for whom she would yield her life, that when this prop is knocked from under her, all seems to go with it. And the home, without a competent head and experienced hand to guide amid the vicissitudes of joy and sorrow, is not the happy home that it could be, and should be.

Much of the neglect of mothers by their daughters comes from want of thought, and many a girl would be appalled at her own portrait could she "see herself as others see her," and would be the first to condemn such conduct in another girl. Yet day by day she goes on accepting and never returning, and ruthlessly trampling upon the heart of one whose every thought is centred upon her happiness and advancement, and that one her mother! Surely this is not the girl who deems herself noble-hearted, who weeps over the woes of mankind in general, and is attentive to outside friends, even to other girls' mothers.

Dear girl, as you prize your own happiness and beauty of character, love, cherish, pet your mother, show deference to her opinion, consult with her, take her into your girl life, and she will grow strong and beautiful, and strong and beautiful for you. Make it your business to open the windows and let in the sunshine into her soul. Let her see that her daughter is thoughtful for her, and enjoys her companionship. Urge her to go out with you, and if she is too preoccupied with household duties to pay much attention to the prettiness of dress, you look out for her; see that her veil is gracefully arranged, her gloves in order, her dress neat and attractive, not letting her give up everything, "for the children." Make much of her at home and abroad, and you will have double reason to be proud of the mother whom you have helped to keep young, as in the sunshine of a daughter's love she blossoms with the beauty of the autumn rose, and blooms and flourishes for you.

Milk, like flesh, fish and eggs, contains all the constituent elements necessary to support life.

The farm is the best place on which to bring up a family of children, first of all, and above all else, for the reason that all surroundings and all conditions are healthful; and, secondly, that there they may be early and continually trained to habits of industry. On the farm there is always something they can do, some responsibility that can be placed upon them. They are thus trained to work, and a power of self-reliance becomes a part of themselves—they grow up good for something in their own individuality. Wise parents recognize these facts and act accordingly.

Takes It Hard.

Some bard, who apparently takes the transition from '98 to '99 very much to heart, sends us the following verses, and requests that as they are reasonable only at present we will give them a trial. Here they are:—

Good bye, '98;

We guess you'll have to go;
You've had your innings for a year,
Which isn't bad, you know.

Then, here's our hand to '99;

He's quite a handsome youth;
We hope his reign may usher in
The dynasty of truth.

We quit the old year with regret,

But gladly hail the new;
So here's our hand to '99,
But '98, adieu.

In India butter was for ages used solely as an ointment for allaying the pain of wounds.

Father Flynn—Why don't you have your pig-sty farther from your house, Geogan? Geogan—Phat for, yer riverence? Father Flynn—Because it's unhealthy. Geogan—Divil a bit, yer riverence! The pig has niver had a sick day since he wuz born!

Hall Caine says: The fate of a nation rests upon the woman. She gives to the child the most of its color; more of her is breathed into the future citizen than is of the man; she is the inward inspiration of man's being. How important, then, that work for the improvement of her conditions should progress.

HARPER'S WEEKLY

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ART

The leading artists of the country will contribute to the pages of the WEEKLY, as heretofore, making it the foremost illustrated weekly.

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Special articles will appear on these two countries by Messrs. Phil. Robinson and F. D. Millet, both of whom made special journeys to the islands.

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These places will be similarly treated by Caspar Whitney and W. Dinwiddie, who likewise made a study of the places.

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Boys' Rights—By a Boy.

Talk about women and darkies, and the --the--all the rest of 'em; none of 'em are half so badly used as the boys are. I know a lot and can give you all their names. Ask 'em all. They'll tell you to be a boy is to be somebody without a right in the world.

You're to take all the sass that's given to you and give none back, 'cause you're a boy. You have to pay full fare in the cars and omnibusses, 'cause you're a boy, and not a child, and never have a seat, 'cause you're a boy and not a man. Fat lady gets in after it's all full and looks about her; everybody looks at you. Old gentleman says, "My son," reprovingly. Conductor says, "Come now, you boy!" You've paid your sumpence. No matter, that's nothing. You have been on your legs all day with a bundle. Who cares? You're a boy. Now a horse has such a load given him as he can carry; and a man won't take any more than he can walk under. Ask boys what grown folks think they can carry. There is no limit to it.

Who doesn't know a boy who does a man's work, and does it well, for a tenth of what a man would get for it? Who hasn't seen an advertisement for a boy who writes a good hand, understands accounts, is willing to make himself useful, boards with his parents, is trustworthy, no objections to his sitting up all night, no impudence about him, the best recommendations required and \$2 a week wages.

Ask boys whether old folks don't make as much fuss about such places as if they were doing you a favor that would set you up for life.

Who wants a boy anyway? Your sister don't in the parlor. Your father don't; he always asks you if you are not wanted to do something somewhere. You make your mother's head ache every time you come near her. Old ladies snap at you. Young ladies hate boys. Young men tease you, and give it to you if you tease back. Other fellows, it's because they're aggravated so I know, always want to fight if they don't know you; and when you get a black eye, or a torn jacket, you hear of it at home.

You look back and wonder if you ever were that pretty fellow in petticoats that everybody stuffs with candy; and you wonder whether you'll ever be a man, to be liked by the girls and treated politely by the other fellows, paid for your work, and allowed to do as you choose. And you make up your mind every day not to be a boy any longer than you can help; and when your grandfather or somebody complains that there are "no boys now, you wonder if he remembers the life he led, that he don't consider it a subject of rejoicing.

There's only one comfort in it all; boys will grow up, and when they do, they generally forget all they went through in their youth, and make the boys of their day suffer just as they did.

If you don't want dull thoughts to come, you must keep 'em away as I keep the weeds out o' my bit o' garden. I fill the beds so full o' flowers that there isn't any room for weeds.—Daniel Quorn.

English tourist to Scotch shepherd:—"Very quiet place this, my man!" Shepherd: "Ou, ay!" Tourist: "Does a newspaper ever find its way here?" Shepherd: "Whiles!" Tourist: "You'll never hear anything, I suppose, of what is going on in London?" Shepherd: "Nae-thing! But then, you see, they hear nae-thing in London aboot what's goin' on here!"

Kerosene Oil Lamps.

In buying lamps or oil remember that the best are always the cheapest in the end. A well-filled, carefully trimmed and clean, odorless lamp adds much to the attractiveness of a table. Clean burners and wicks are essential to clear light. The metal holders should be boiled in salt and soda water every few weeks, for heated metal gives out a foul odor. The wicks become clogged by the paraffine in the oil, and if long in use should be occasionally washed, boiled and dried. If soaked in vinegar they are said to give a clearer light. The wick should never crowd the tube. If too tight pull out two or three threads lengthwise. When first lighted, do not turn very high, as the flame is apt to increase. Never turn low and leave lighted. Never light a half-filled lamp that has been standing any length of time. Lamps should be cared for in the morning as a regular part of the routine work. Fill within a half-inch of the top, trim evenly—just the charred part of the wick—using scissors kept especially for that purpose, or rubbing off with a bit of paper. The chimneys do not always need washing. By breathing lightly down the chimney and rubbing with a tissue paper, a handful of waste or a clean, soft cotton cloth, they can be kept bright and clear. Never wash in warm, soapy water, as chimneys thus treated crack easily and take on a cloudy surface that no rubbing can eradicate. Never clean with the patent brushes or bristles on a metal holder, as they scratch the glass, and the chimneys break. Chimneys were formerly tempered in the manufacture, but are now so low that this precaution is omitted. They may be tempered at home by putting in cold water and bringing to a boil. Then cool in water. Cold water and alcohol give chimneys the highest polish. When the lamp is filled and trimmed, rub and dry every inch of the bowl, fixture, handle and base, that no kerosene be left to soil the hands of the "lamplighter," and turn the wick rather low, to avoid the capillary overflow.—Portland Transcript.

The Best Fats for Frying.

Gouffe, the highest French authority in cookery, ranks frying fats as follows:—

The best is the drippings of roast meat and the top of the broth or soup pot; next is beef suet, chopped fine and tried out. Butter requires a slow fire and burns quickly, and is, therefore, inferior to either of the fats previously named for frying besides being expensive. Oil always requires careful handling, as it rises rapidly and is liable to boil over. "Lard," adds this authority, "I am no advocate of, as it always leaves an unpleasant coating of whatever is fried in it."

To clarify drippings and fat from beef or fresh pork, melt them in an iron frying pan, and let them stand on the top of a hot stove till all the water boils out of them; then strain them through a fine muslin cloth into a general pot kept for the purpose. This kind of fat is the most valuable frying fat that can be obtained. It is far better than lard, so commonly used for deep frying. And as it would be difficult to save enough of this fat for deep frying, clean beef suet may be added to it after chopping, melting and straining.

Salt fats should be put in a kettle of cold water, and then thoroughly boiled up with it for about an hour. After this let the water cool, and the fat will harden on it. Remove it in a cake, melt it out in a spider, and try it out like other fats. Strain it when the bubbles cease to rise. This shows that no water is left in it. Put it in a pot by itself for ordinary use, such as the frying of potatoes, mush, etc.

Some Uses of Soda.

Apart from the use of bicarbonate of soda as a relief for indigestion both this form and the crude washing soda are useful to the cook and the housekeeper.

A burn caused by a hot iron will cease to pain almost immediately if a piece of soda, moistened with the tongue, is put on. A scald or burn, if the skin is not broken, can be cured by placing the burnt part in strong soda water.

Boil greasy tins in soda water once a week, and use hot soda water for a greasy sink.


Put a piece of soda the size of a walnut to a tablespoonful of salt into a basin, and pour on boiling water. Allow dirty sponges to stand in this for a short time, when they will be quite clean and free from grease. Rinse in cold water.

Dissolve a cupful of soda in a gallon of water, and leave in a jar near the kitchen sink. Into this throw all pieces of soap and remains of packets of dry soap. Dip into the jar and add to the water used for washing and scrubbing very dirty pans, earthenware, tinware, woodwork (but not paint) and for washing kitchen cloths and dusters.

Common washing soda dissolved in water until the liquid will take up no more is said to be an excellent cure for warts. Moisten the warts with it, and let them dry without wiping.

A pinch of carbonate of soda put into the teapot will increase the strength of the tea. This applies particularly to places where the water is hard.

Moderately strong salt and water taken by the teaspoonful at intervals is a cure for catarrhal cold.



YOUR ATTENTION

Our No. 1 Collection contains 33 full sized packets of the best Vegetable Seeds, sufficient to furnish vegetables throughout the year, and one packet of Flower Seeds, which we will send prepaid to any address in the Dominion of Canada or United States for the extremely low price of \$1, as follows: Bean, dwarf; Bean, pole; Beet, early; Cabbage, early; Cabbage, late; Celery, early; Celery, late; Citron; Corn, sweet; Corn, field; Carrot; Cauliflower; Cucumber; Lettuce, early; Lettuce, late; Musk Melon; Water Melon; Onion, red; Onion, yellow; Parsley; Parsnip; Pepper; Peas, early; Peas, late; Pumpkin; Radish, early; Radish, late; Salsify; Squash; Spinach; Turnip, early; Turnip, sweet; Tomato; and one packet Wild Garden Flower Seed Mixture.

Our No. 2 Collection contains 16 packets for 50c, as follows: Bean, dwarf; Beet, Carrot, Corn, sweet; Cucumber; Cabbage, Celery, Lettuce, Musk Melon, Onion, Parsnip, Parsley, Peas, Radish, Tomato, Turnip, and one packet Wild Garden Flower Seed Mixture.

Our No. 3 Collection contains 8 packets for 25c, as follows: Bean, Beet, Carrot, Onion, Radish, Lettuce, Cucumber, Peas. The above sent post paid to any address on receipt of price. Our Handsome Illustrated Catalogue containing other great offers mailed free to any address.

R. ALSTON, Royal Greenhouse & Seed Establishment, WINNIPEG, MAN.

Pleasures on the Farm.

Oh, 'tis royal fun to frolic
On the fragrant, new-mown hay,
To roll and romp and tumble,
And to while the time away;
What a joy to lie and slumber,
Innocent of worldly care,
On the clover in the haymow,
When some other's put it there.

What a joy, when one is thirsty,
Ere as yet 'tis time to sup,
To consume the sweet ambrosia
That the cows have yielded up—
To drink out of the milkpail,
While you poise it in the air—
When some other has extracted
The rich fluid that is there.

What a joy it is, in summer,
To be free upon the farm;
Ah, the very air seems freighted
With a mystic sort of charm;
Round and over all a dreamy,
Peaceful spirit seems to lurk—
That is, if you do the dreaming,
While some other does the work.
—Chicago Daily News.

Are You Tired of Saying "Don't?"

Have you ever stopped to consider how many times in the course of a day you say to the little ones "Don't do this," or "Don't do that?" Just take notice of it one day, and you will discover that there is very little they do that does not cause you to use the word in one form or another. It would make an agreeable change both for you and the children to try another plan, and when you see them about to do something you do not wish, suggest to them something which you know will prove equally as agreeable. For instance, when your little girl begins to fidget and play with the piece of needlework you have in hand, you might suggest that she get a needle and piece of muslin and play at making doll's clothes. If it is ever such a cobbler she will get an immense amount of amusement out of it. When your small son sails in with a hammer in his hand, and visions of smashed furniture rise before your eyes, instead of saying, "Don't, Bobby," give him some pieces of broken boxes, and let him have a seat in the garden or the back kitchen, and set him to work to make a rabbit-hutch. Of course, no such thing as a rabbit-hutch will be the result of his labors, but he will think of it, and it will keep him amused for some time.

Mothers should try and suggest amusements more often for the children. The little ones get tired of finding games for themselves, and wander aimlessly about, meddling first with this and then with that, to be checked in most cases with the hated word "Don't." The mind of an adult is so much fuller of ideas, and children, as a rule, are so ready to grasp them that a little thought and exertion on the part of the mother now and then would not only keep the children amused but out of mischief, too. I spent the afternoon recently with the mother of two little boys, who said "Don't do that" so often that at last the elder turned to her and said, with a grieved and puzzled look on his little face: "What may we do, mamma?"

The secret of success in life is for a man to be ready for his opportunity when it comes.—Disraeli.

Some mothers make neatness and order an idol and unconsciously, perhaps, sacrifice to it not only their own best energies, but also the comfort of the family. They put their heart into their housework so completely that other and more important duties are crowded out. A mother's duty lies not only in the "washing and the baking and the brewing," but in the cultivation of the higher virtues.

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Mending Lamps.

Some people experience a great deal of trouble in keeping the tops on their lamps. The tops come off soon after they are put on. If the bowls are filled too full the oil will soon work the tops loose. Put the tops on according to the following instructions and there will be no more trouble with them if the bowls are not filled too full: Clean the lamps thoroughly; boil the tops in a little soda water, rinse in clear water and let them dry. Then prepare a little fine plaster of paris by sifting through a cheesecloth. Mix it quickly with a little water, having it only wet enough to work easily, like bread dough when ready for the oven. Fill the lower portion of the brass top with the dough, taking care that it does not close up the opening into the lamp. It is a good plan to fill the opening in the top with a roll of paper. Press the top into place and see that it remains undisturbed until perfectly firm and dry. It is well if possible to leave the lamp some days without using. The secret of success is to have the lamp and burner absolutely free from oil or grease of any sort. There are lamps the tops of which are so imperfectly made that no amount of care will make them hold the plaster. For these a good coating of cement applied and allowed to become perfectly dry is necessary. Over this the plaster often holds securely.

Business Progress.

The Welland Vale Mfg. Co., St. Catharines, Ont., are now showing their samples of 1899 models, which consist of the Perfect, Garden City, and Dominion, in chain, and Perfect in chainless bicycles. This firm are the largest makers of bicycles in Canada, and have a splendidly equipped factory, where they employ over 500 hands the year round. They are also makers of edge tools, handle farming implements, axes, saws, forks, hoes, rakes and scythes, and have established an enviable reputation for quality in all the lines they manufacture. For the benefit of our readers, who may not have had personal experience in the use of Welland Vale goods, we may say that one of our staff has used a Perfect with such satisfaction that we are buying further for our use from them. The axle brake is a feature of great convenience and utility and works nicely. This, with the general perfection of their wheels, makes us feel that we cannot speak too highly of them.

When visiting their establishment recently we learned that their chainless wheel is becoming very popular, the orders being very heavy for next season's output.

Let kindness and consideration for others be one of the first things taught to a child. The little one in his mother's arms is not too young for such a lesson, and a thorough training of the child in this respect will save much regret in after life, and will help to elevate the sentiments and raise the standard of the home. In place of the patient, self-sacrificing mother, with selfish, thoughtless children, will be found a hopeful, helpful, happy family, with parents and children alike on the same footing of unselfish good comradeship.

Arkwright was fifty years old when he began to learn English grammar and improve his writing and spelling. Benjamin Franklin was past fifty before he began the study of science and philosophy. Milton, in his blindness, was past the age of fifty when he sat down to complete his world-known epic, and Scott at fifty-five took up his pen to redeem an enormous liability. Cato learned Greek at eighty. "Yet I am learning," said Michael Angelo, when three score years and ten were past, and he had long attained the highest triumphs of his art.

The secret of good, healthy development for children is to keep them busy, whether it be at work or play or a happy mixture of the two. And men, it must be remembered, are only children grown tall. Idleness will make trouble for old or young, but to get the most good out of life one must not forget that wholesome play and recreation does not come under the head of idleness. Some people think that unless they are continually in the business grind they are idle, but they do not realize how much strength for work can be stored up in a little play.

A very handsome sofa pillow which was seen recently was made of fine India linen, or some sheer material. On one side was worked a bunch of clover—the effect being that of a dozen or more thrown together, with their stems over-lapping each other. The top blossoms were shaded from pale red to white, others darker and the lower ones quite dark. The effect was beautiful, indeed, but would be far handsomer if worked on black satin. Another cushion consisted of sweet peas, the stems running from each of the four edges toward the centre and worked in every shade in which the flower is seen.